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Ministry of Education

المملكة العربية السعودية

Health Care

Secondary Stage – Pathways System
Third Year

The book is distributed freely and cannot be sold.

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INTRODUCTION

The progress and development of countries can be measured by their ability to invest in education and by the extent to which their educational system responds to the requirements and changes of the age. It is the responsibility of the Ministry of Education to sustain the development of its educational systems. In response to the concept of Saudi Arabia's Vision 2030 policy, the Ministry has taken the initiative in adopting the Secondary Education Pathways system with the aim of bringing about effective and comprehensive reform at the secondary stage.

The Secondary Education Pathways system provides a distinguished and modern educational model for secondary education in Saudi Arabia, which efficiently contributes to:

- Strengthening the values associated with belonging to our homeland, the Kingdom of Saudi Arabia, and of loyalty to its wise leaders, may Allah protect them, based on pure belief founded on tolerant Islamic teachings.
- Strengthening the values of citizenship by focusing on them in the school curriculum and in class activities, in line with the demands of sustainable development and the development plans of Saudi Arabia, which emphasize the consolidation of the duality of values and identity, founded on the teachings of Islam and moderation.
- Offering qualifications to students that are in line with future specializations in universities and colleges or the required professions, and ensuring that educational outputs are consistent with the requirements of the labor market.
- Enabling students to pursue education along their preferred track at an early stage, according to their inclinations and abilities.
- Enabling students to enrol in specific scientific and administrative disciplines related to the labor market and future jobs.
- Integrating students into an enjoyable and stimulating learning environment within the school, based on a constructive philosophy and applied practices within an active learning environment.
- Guiding students on an integrated educational journey from the primary stage to the end of secondary stage, and facilitating the process of their transition to the post-general education stage.
- Providing students with the technical and personal skills which will help them to deal with life and to respond to the requirements of the stage they are at.
- Expanding opportunities for graduate secondary school students through various options in addition to universities, such as by obtaining professional certificates, joining applied colleges, and obtaining job diplomas.

The Pathways system consists of six semesters taught over three years, including a common first year in which students receive lessons in various scientific and human fields, followed by two specialized years during which students follow a general pathway as well as four specialized pathways consistent with their inclinations and abilities. These are: the Legal Pathway, the Business Administration Pathway, the Computer Science and Engineering Pathway, and the Health and Life Pathway. This makes this system the best option for students in terms of:

- The existence of new study materials that comply with the requirements of the so-called Fourth Industrial Revolution and its associated development plans, as well as the Saudi Vision 2030 policy which aims to develop higher-order thinking, problem solving, and research skills.

- Elective field programs which are consistent with the needs of the labor market and the students' own preferences. This enables students to enrol in a specific elective field according to a specific job skills matrix.
- An "inclination" scale that ensures the attainment of students' efficiency levels and effectiveness, and helps them to determine their own tendencies, predispositions, and strengths—all of which enhances their chances of success in the future.
- Volunteer work designed specifically for students in line with the philosophy of activities in schools, which is also one of the graduation requirements. This helps to promote humane values, build up society, and ensures its development and cohesion.
- A transfer procedure that enables students to move from one pathway to another according to specific mechanisms.
- Proficiency classes in which skills are developed and achievement levels improved, by providing intensive and remedial lessons.
- Options for combining education with e-learning and blended learning/teaching, which are built into the Pathways system for reasons of flexibility, convenience, interaction, and effectiveness.
- A graduation project that helps students to integrate theoretical experiences with applied practices.
- Professional and skill-based certificates that are awarded to students after completing specific tasks and certain tests in partnership with specialized bodies.

The Health and Life Pathway is one of paths developed at secondary level. It contributes to promoting health and disease prevention, by providing students with knowledge, skills, and positive attitudes that strengthen healthy individual and social behaviors, and investing in the potential of its citizens in biomedical specializations, preparing them for the world of work. The Health and Life Pathway is distinguished by its detailed content in the fields of science and mathematics, and specialized courses in the field of health and life, enhanced by teaching techniques that emphasize the role of the learner in the educational process.

"Health Care" is one of the main subjects in the Health and Life Pathway. It aims to:

- Provide students with knowledge and skills related to health care.
- Contribute to the students' overall educational journey and enhance the integration of subjects learned at lower academic levels.
- Enhance students' understanding of the skills needed in the health care field.
- Develop an understanding of the procedures involved in the various roles described.
- Keep pace with global developments in this field. "Health Care" provides the teacher with an integrated set of diverse educational materials that take into account the individual differences between students. It provides students with the opportunity to employ modern technologies and practice-based communications that serve to further consolidate the teaching and learning process outlined in the book.

"Health Care Part 1" begins by introducing students to thinking and behaving professionally, and to communicating effectively, treating patients as individuals. It goes on to explore the changes involved in aging and the care that older people might need. It also details the skills and procedures involved in working as a nursing assistant. "Health Care Part 2" explores the skills and procedures involved in working as a medical assistant, and the business and accounting skills needed for work in health care. It finishes with a chapter looking at professional development and lifelong learning.

By introducing this book to our students, we hope it excites their interest, meets their needs, and makes their learning of this course more enjoyable and useful.

May Allah grant us success

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Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 5 14/06/2023 10:25

CONTENTS

Introduction 4
How to Use This Textbook 8
Foreword 11

Part 1

CHAPTER 1 QUALITY AND COMMUNICATION IN HEALTH CARE 16

Case Study Investigation 16
Learning Objectives 16
Key Terms 16
Introduction 17
1:1 Getting Off to a Good Start 17
1:2 Learning to Think Like a Health Care Professional 23
1:3 The Communication Process 28
1:4 Overcoming Communication Barriers 44
1:5 Understanding the Patient as an Individual 51
Today's Research: Tomorrow's Health Care 53
Case Study Investigation Conclusion 53
Summary 54
Mini Cases 54
Review Questions 56
Critical Thinking 58
Activities 59

CHAPTER 2 GERIATRIC CARE 60

Case Study Investigation 60
Learning Objectives 60
Key Terms 60
Introduction 61
2:1 Myths About Aging 62
2:2 Physical Changes in Aging 64
2:3 Psychosocial Changes in Aging 72
2:4 Confusion and Disorientation in the Elderly 77
2:5 Meeting the Needs of the Elderly 83
Today's Research: Tomorrow's Health Care 85
Case Study Investigation Conclusion 85
Summary 86
Mini Cases 86
Review Questions 88
Critical Thinking 90
Activities 91

CHAPTER 3 NURSE ASSISTANT SKILLS 92

Case Study Investigation 92
Learning Objectives 92
Key Terms 92
3:1 Admitting, Transferring, and Discharging Patients 93
3:2 Positioning, Turning, and Moving Patients 97
3:3 Bedmaking 115
3:4 Administering Personal Hygiene 118
3:5 Measuring and Recording Intake and Output 125
3:6 Feeding a Patient 130
3:7 Assisting with a Bedpan/Urinal 132
3:8 Providing Catheter and Urinary Drainage Unit Care 134
3:9 Providing Ostomy Care 137
3:10 Collecting Specimens of Feces/Urine 139
3:11 Administering Preoperative and Postoperative Care 142
3:12 Administering Oxygen 148
Today's Research: Tomorrow's Health Care 153
Case Study Investigation Conclusion 153
Summary 154
Mini Cases 154
Review Questions 156
Critical Thinking 159
Activities 160

وزارة التعليم
Ministry of Education
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 6 14/06/2023 10:25

Part 2

CHAPTER 4 MEDICAL ASSISTANT SKILLS **162**

Case Study Investigation **162**
Learning Objectives **162**
Key Terms **162**
4:1 Measuring/Recording Height, Weight, and Head Circumference **163**
4:2 Positioning a Patient **179**
4:3 Screening for Vision Problems **185**
4:4 Assisting with Physical Examinations **186**
4:5 Assisting with Minor Surgery and Suture Removal **191**
4:6 Recording and Mounting an ECG **199**
4:7 Working with Medications **205**
Today's Research: Tomorrow's Health Care **211**
Case Study Investigation Conclusion **211**
Summary **212**
Mini Cases **212**
Review Questions **214**
Critical Thinking **217**
Activities **217**

CHAPTER 5 BUSINESS AND ACCOUNTING SKILLS **218**

Case Study Investigation **218**
Learning Objectives **218**
Key Terms **218**
5:1 Filing Records **219**
5:2 Using the Telephone **221**
5:3 Scheduling Appointments **227**
5:4 Completing Medical Records and Forms **232**
5:5 Composing Business Letters **237**
5:6 Completing Insurance Forms **242**
5:7 Maintaining a Bookkeeping System **246**
Today's Research: Tomorrow's Health Care **250**
Case Study Investigation Conclusion **250**
Summary **251**
Mini Cases **251**
Review Questions **253**
Critical Thinking **255**
Activities **257**

CHAPTER 6 PROFESSIONAL DEVELOPMENT AND LIFELONG LEARNING **258**

Case Study Investigation **258**
Learning Objectives **258**
Key Terms **258**
6:1 Professional Development **260**
6:2 The Importance of Lifelong Learning **263**
6:3 Continuing Medical Education **265**
6:4 Self-directed Learning **267**
6:5 Career Ladders **270**
Today's Research: Tomorrow's Health Care **271**
Case Study Investigation Conclusion **271**
Summary **272**
Mini Cases **272**
Review Questions **274**
Critical Thinking **276**
Activities **277**

Glossary **278**

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 7 14/06/2023 10:25

HOW TO USE THIS TEXTBOOK

LEARNING OBJECTIVES

Review these goals before you begin reading a chapter to help you focus your study. Then, when you have completed the chapter, go back and review these goals to see if you have grasped the key points of the chapter.

LEARNING OBJECTIVES (EXAMPLES)

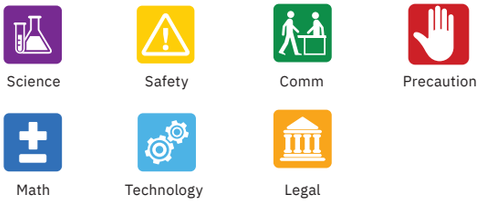
After completing this chapter, you should be able to:

- Differentiate between the myths and facts of different aspects of aging.
- Identify at least two physical changes in aging in each body system.
- Demonstrate methods of providing care to the elderly individual who is experiencing physical changes in aging.
- List five factors that cause psychosocial changes in aging.
- Describe at least six methods to assist an elderly individual in adjusting to psychosocial changes.
- Describe the causes and effects of confusion and disorientation in the elderly.
- Create a reality orientation program.

ICONS

Icons are used throughout the text to highlight specific pieces of information.

(EXAMPLES)



KEY TERMS

Key terms highlight the critical vocabulary words you will need to learn. These terms are highlighted red within the text. You will also find most of these terms listed in the Glossary section. Use this listing as part of your study and review of critical terms.

KEY TERMS (EXAMPLES)

Alzheimer's disease
arteriosclerosis
arthritis
atherosclerosis
autonomy
bronchitis
cataracts
cerebrovascular accident
delirium
dementia
dysphagia
dyspnea
emphysema
glaucoma
incontinence
nocturia
osteoporosis
reality orientation
senile lentigines
thrombus
transient ischemic attacks (TIAs)

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Ministry of Education
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 8 14/06/2023 10:25

TODAY'S RESEARCH: TOMORROW'S HEALTH CARE

Today's Research: Tomorrow's Health Care boxes are located in all chapters. These commentaries help you learn about the many different types of research occurring today. If the research is successful, it may lead to possible cures and/or better methods of treatment in the future for a wide range of diseases and disorders. These boxes of information also highlight the fact that health care changes constantly because of new ideas and technology.

Today's Research **Tomorrow's** Health Care (Example)

The Nose Knows Cancer?

Even though treatment for cancer has improved and many lives have been saved, some types of cancers are extremely difficult to detect at an early stage when a cure is most likely. Examples include stomach, bone, kidney, pancreatic, and ovarian cancers.

Scientists all over the world are researching the possibility of a "smell test" for cancer using dogs. Initially, researchers in California trained five different dogs to smell breast and lung cancer on a patient's breath. Since then, dogs have been used to identify breast cancer, lung cancer, colorectal cancer, and prostate cancer with accuracy rates approaching 100% (**Figure 1–47**). Researchers think the dogs were able to smell the cancers by sensing minute amounts of volatile organic compounds (VOCs) that are end products of metabolism, which are excreted in breath, urine, and feces. Some researchers are isolating polyamines, molecules linked to cell growth and differentiation, because cancer raises polyamine levels and they have a distinct odor. Estimates are that a dog's sense of smell can be 10,000 to 100,000 times superior to a human's sense of smell, so the dogs can detect minute quantities of the VOCs.

Currently, many researchers are working to identify and isolate the chemical compounds associated with different types of cancers. This is very challenging because the smell of cancer is probably made up of many different chemicals. In fact, each type of cancer might have a unique chemical combination. At the same time, researchers are trying to develop artificial noses that will be able to detect specific chemical compounds. Recently, several electronic noses (e-noses) have been produced and are being used in trial studies. Initial studies have had some success. One e-nose was able to distinguish between lung cancer patients and high-risk smoking patients without cancer 80% of the time. Another model was able to identify prostate cancer from the scent of urine 78% of the time. A third e-nose checking fecal gas identified 73–85% of patients with colorectal cancer. Once the compounds associated with cancer are identified, it may be possible to modify the e-nose to detect them by inserting sensors to detect the specific compounds. Eventually, it is very possible that a simple noninvasive test using scents from breathing, urine, feces, and even blood could lead to early detection of cancer. This research could save many lives.

FIGURE 4–44 Dogs have been used to identify different types of cancer with accuracy rates approaching 100%.

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Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 9 14/06/2023 10:25

REVIEW QUESTIONS

Review Questions enhance your comprehension of chapter content. After you have completed the chapter reading, try to answer the review questions at the end of the chapter. If you find yourself unable to answer the questions, go back and review the chapter again.

REVIEW QUESTIONS (EXAMPLES)

1. Why are height and weight measurements important?
2. Identify at least six different positions that can be used for examinations and/or treatments. For each position, give one reason for using the position.
3. Define myopia and hyperopia and describe the difference between the two conditions.
4. What place does observation have in a general physical examination?
5. What is auscultation?
6. Explain four standard precautions that must be observed while assisting with minor surgery or suture removal.

CRITICAL THINKING

Critical Thinking questions offer you the ability to build upon the content learned throughout the chapter. You will form greater knowledge by investigating complementary topics.

CRITICAL THINKING (EXAMPLES)

1. Use reliable internet sources to find the medication celecoxib. List the main action of this drug, suggested dosage, route of administration, and warnings/adverse effects. Create a patient information brochure for this drug.
2. Why is it important to consider the safety aspects of giving medication? What risks are there in administering medicines?

ACTIVITIES

Activities give you the chance to work with fellow classmates. Using real-life medical scenarios, you will have the opportunity to apply what you learned in a creative and challenging way.

ACTIVITIES (EXAMPLES)

1. **a.** In a group of four, create a script for the following scenario: Maha brought her baby girl, Lama, to the doctor's office for her 6-week check-up. She also brought her two other children, Youssef and Mohammed, because they have a headache and fever. Sarah is the medical assistant at the clinic. She calls the family and checks them in. She obtains and records all measurements and their chief complaints. The doctor looks in both boys' and Lama's ears and orders an immunization update for everyone, and antibiotics for Youssef and Mohammed.

   b. In the same group, role play the script. Modify the scenario by making the boys combative and not wanting to stand still for an injection.
2. Working with another student, use a CPR (cardiopulmonary resuscitation) manikin to demonstrate the correct placement of a 12-lead ECG, or sketch the information on a piece of paper.

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Ministry of Education
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 10 14/06/2023 10:26

FOREWORD

Changes in health care are rapid and continuous. Professionals at all levels are being given additional responsibilities. Efficiency and flexibility, combined with competency, are vital to workplace success. To be competent and successful in this ever-changing environment, health care professionals must be able to think for themselves, and learn and adapt as necessary to meet current employment demands.

Students are introduced to the concept of thinking like a health care professional (also called “critical thinking”) in Chapter 1. The specific skills that make up applied thinking are explained in everyday language. Students will learn a step-by-step problem-solving model to help them to approach new situations.

Chapter 2 discusses geriatric care. Most countries of the world are experiencing an “aging boom”. The health of and care for the growing population of elderly people are some of the greatest challenges facing all countries as a result of population aging and a change in the distribution of age groups. Since the introduction of initiatives from the Ministry of Health, considerable advances have been made in life expectancy. It is expected that the older adult population of people aged 65 years and older will reach 22% or higher by 2050. The Saudi Arabia Ministry of Health has developed a National Strategy for the Health of the Elderly to meet the elderly’s health needs, physically, psychologically, mentally, and socially.

Today, most individuals live into their 70s, and many individuals enjoy healthy and happy lives as 80- and 90-year-olds. This age group uses health care services frequently, so it is essential for a health care provider to understand their special needs.

Nurse assistant skills are discussed in Chapter 3 of this textbook. Nurse assistants, also called nurse aides, nurse technicians, patient care technicians, patient care assistants, and orderlies, work under the supervision of fully qualified nurses. Many assistants obtain training through health science education programs. In many countries, assistants who work in long-term care facilities or home health must complete a minimum number of hours in a mandatory training program and pass a written and/or competency examination to obtain certification or registration. Additional

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Ministry of Education
2026 - 1448

educational requirements include continuing education, periodic evaluation of performance, and retraining if the assistant is not employed for two or more years.

Geriatric assistants provide care for patients in environments such as extended care facilities, nursing homes, assisted-living centers, and adult day care agencies.

Home health assistants or aides perform many of the duties of nurse assistants, but they provide care in the patient's home, usually for an extended period. Examples of patients who require home care include patients who have just been discharged from a hospital or long-term care facility, patients who have a disability, elderly patients who require assistance, and patients receiving hospice care. In addition to performing many of the personal care duties of the nurse assistant, home health assistants may also shop for food and prepare meals, maintain and clean the home environment, wash laundry, and accompany patients on shopping trips or to medical appointments.

The duties of nurse assistants vary depending on the facility in which they work. In addition to the knowledge and skills presented in Chapter 3, nurse assistants must also learn and master skills such as presenting a professional appearance and attitude, communicating effectively, and learning medical terminology.

Medical assistants work under the supervision of physicians, and they are important members of the health care team. Educational requirements vary but can include on-the-job training (less frequent), health science education programs, and an associate's degree.

The duties of medical assistants vary depending on the size and type of practice, and on the legal requirements of the area in which they work. Duties are often classified as administrative or clinical. Administrative, or "front office", duties may include tasks such as answering telephones, scheduling appointments, maintaining records, handling correspondence, and bookkeeping. These duties are usually performed by medical administrative assistants who can obtain certification. Clinical, or "back office", duties may include taking medical histories, recording vital signs, preparing patients for and assisting with examinations and treatments, and performing basic laboratory tests. Some medical assistants perform both administrative and clinical duties; others specialize in either administrative or clinical work. The procedures discussed in Chapter 4 represent clinical duties. In addition to the knowledge and skills presented in this chapter, medical assistants must also learn and master skills such as:

- Presenting a professional appearance and attitude.
- Obtaining knowledge regarding health care delivery systems, organizational structure, and teamwork.
- Meeting all legal responsibilities.
- Communicating effectively.
- Comprehending human anatomy, physiology, and pathophysiology.
- Learning medical terminology.
- Observing all safety precautions.
- Practicing all principles of infection control.

وزارة التعليم
Ministry of Education
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 12 14/06/2023 10:26

- Taking and recording vital signs.
- Performing simple laboratory tests.
- Administering first aid and cardiopulmonary resuscitation.
- Promoting good nutrition and a healthy lifestyle to maintain health.

Administrative duties are discussed in Chapter 5 of this textbook. They comprise:

- Using computer and technology skills.
- Performing administrative duties such as answering the telephone, scheduling appointments, preparing correspondence, completing insurance forms, maintaining accounts, recording medical histories, and maintaining patient records.
- Ordering and maintaining supplies and materials.

Chapter 6 will be relevant to all students, whatever branch of health care they embrace. Health care professionals will usually be required to undertake continuing professional development (CPD) as part of maintaining their practice registration. However, keeping up to date throughout their career is critical for people in all roles in health care because of the rapid evolution of medicines and treatments, and the increasing use of technology. The chapter will help students understand the importance of professional development for:

- Demonstrating their ability to improve.
- Keeping their qualifications up to date.
- Staying on top of the many developments in their field.
- Ensuring that they maintain a high standard of skill.
- Ensuring that they maintain and enhance the knowledge and skills they need to deliver a professional service to their patients.

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Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 13 14/06/2023 10:26

GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 14 14/06/2023 10:26

Part 1

Chapter 1 **Quality and Communication in Health Care**

Chapter 2 **Geriatric Care**

Chapter 3 **Nurse Assistant Skills**

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CHAPTER

1

QUALITY AND COMMUNICATION IN HEALTH CARE

Case Study Investigation

You are working as a medical assistant in the office of an oncologist (cancer specialist). Rashmi, a 56-year-old Indian woman who moved to Saudi Arabia with her husband, who works in the oil industry, comes to the office accompanied by her 20-year-old daughter. Rashmi speaks very little Arabic, and only a little English, but her daughter is bilingual. This visit was at the daughter's insistence after her mother admitted finding a small lump in her breast. Rashmi is very anxious about the visit. At the end of the chapter, you will be asked how you would work with this patient, including a review of her individual needs.

LEARNING OBJECTIVES

After completing this chapter, you should be able to:

- Identify and describe the essential core qualities demonstrated by effective health care professionals.
- List six examples of how students can apply the essential core qualities while they are in school.
- Describe the five-step problem-solving process.
- List the personal factors that should be considered when choosing a health care career.
- Demonstrate the importance of effective communication in health care.
- Explain how health care professionals use communication to help patients.
- List the reasons why patients do not follow medical advice.
- Identify and demonstrate the six steps in the communication process.
- List the goals that should be included in every interaction with a patient.
- Define and explain when to use the four types of questions.
- Explain the meaning and importance of nonverbal communication.
- Identify examples of positive body language.
- List the environmental factors that affect communication.

KEY TERMS

active listening
aphasia
assessment
body language
feedback
integrity
nonverbal communication
objective data
problem-solving process
receiver
scope of practice
sender
signs
subjective data
symptoms
therapeutic communication

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GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 16 14/06/2023 10:26

INTRODUCTION

Health care is an exciting and growing field. The purpose of this text is to help you make an informed career choice and acquire the basic knowledge to continue the studies necessary for your chosen field. Careers in health care can be sources of great satisfaction. Health care professionals perform valuable services that make a significant contribution to the community. Each day their work makes a difference in the quality of life of those they serve. Whether you choose to work directly with patients or provide support services, be assured that what you do is important and of benefit to others.

As well as providing satisfaction, health care work makes many demands on those who pursue it. The work must be taken seriously because it affects the well-being of others. All tasks must be performed thoughtfully and conscientiously. Nothing can be taken for granted or done automatically, not even routine assignments. Health care professionals must be willing to devote their full attention to everything they say and do. Potential problems must be noted and addressed before they become critical. The consequences of mistakes can be devastating if, for example, a prescription for medication is incorrect or the wrong procedure is performed. The work can also be stressful. Depending on the chosen occupation, it can involve long hours, dealing with the death of patients, and working quickly under pressure.

1:1 GETTING OFF TO A GOOD START

Take advantage of the learning opportunities available to you and commit yourself to doing your best toward becoming a competent, qualified health care professional. Once you have completed school, the skills you have learned will stand you in good stead in your post-school education.

ESSENTIAL CORE QUALITIES OF HEALTH CARE PROFESSIONALS

As a student, you have many opportunities in school to begin to practice good workplace habits. Work hard now to develop the skills that will make you a valuable employee. At the same time, you can be acquiring habits that also contribute to academic success. The qualities essential for health care professionals to be effective and successful can be applied in the classroom, in the laboratory, and later in your professional training. Start now while you are in school to develop and apply them.

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2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 17 14/06/2023 10:26

FIGURE 1–1 Successful health care professionals have compassion, and show respect and consideration for their patients.

- **Have compassion:** Care about others. Apply knowledge and skills to decrease suffering and increase the well-being of others. When necessary, be willing to put the needs of patients ahead of your own. Have respect for all people and help them regardless of their race, nationality, economic status, religion, age, or lifestyle preferences (**Figure 1–1**).
  - *Start now:* Show respect and consideration for instructors and classmates. Be kind to everyone, regardless of their background. Refrain from talking during lectures. Prepare for classes so the instructor does not need to take time to answer questions about material covered in the reading or study assignments. Practice courtesy in the classroom and throughout the school. Volunteer to help others as needed or as possible.
- **Have integrity:** Be honest at all times. Respect the privacy of others. Be loyal to the employer. Accept responsibility for your actions.
  - *Start now:* Do your own work. Never copy the homework assignments of others or cheat in exams. Always tell the truth. Never share anything told to you in confidence.
- **Be dependable:** Be at work on time and as scheduled. Follow through and finish all assigned tasks. Perform work accurately and completely. Work without constant supervision and reminders.
  - *Start now:* Be at school on time and attend all classes. Complete assignments on time. Strive for accuracy in all written and practical assignments. Follow through on all obligations and anything you have volunteered to do.

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Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 18 14/06/2023 10:26

- **Work well with others:** Strive to understand the feelings and needs of others. Be courteous and considerate. Practice good communication skills. Be a good team member by cooperating and contributing to the achievement of group goals. Take directions willingly from the supervisor.
  - *Start now:* Be understanding of the needs of instructors and classmates. Participate in class. Do your share when working on group assignments.
- **Be flexible:** Be willing to adapt to changing conditions. Do what is needed to carry out tasks. Acquire knowledge and skills necessary to keep up with advances in technology and changes in the way health care is delivered.
  - *Start now:* Accept instructional differences, changes in class schedules, and other unexpected occurrences. Be willing to cooperate as needed.
- **Be willing to learn:** Keep skills up to date. Ask questions, attend workshops, read professional publications, use the Internet, and continue to acquire new skills.
  - *Start now:* Be willing to learn. Take your studies seriously. Make school a high priority. Dedicate sufficient time to studying throughout the length of each course to ensure maximum learning.

LEARNING FOR MASTERY

Health care professionals must know what they are doing. Mistakes on the job can result in serious consequences. It is essential that students commit to learning the material presented in their courses. Learning means more than just memorizing facts. It means striving to understand and remember information so that it can be applied to new situations. This understanding provides a basis for thinking like a health care professional, which is discussed later in this chapter.

Students who do only the minimum necessary to pass tests may think they are learning, but in reality, they are not likely to have acquired the long-term knowledge necessary to perform on the job. Students who study to understand and always search out the 'why' of the subject increase their chances of becoming highly competent health care professionals who can think on their feet and meet new challenges as they arise.

One effective way for students to master subjects is to ask themselves questions about what they are learning or doing. Questions serve to gather information, expand your view of a subject, and stimulate the mind. They help ensure that actions are not based on false assumptions or insufficient information. Questions can be asked mentally (to oneself) or of others

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 19 14/06/2023 10:26

FIGURE 1–2 One effective way for students to master subjects is to ask questions of themselves and others.

وزارة التعليم
Ministry of Education
2016 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 20 14/06/2023 10:26

(**Figure 1–2**). Think: What? When? Where? Why? Who? How? The following examples show how questions can be used to promote learning:

- When learning new information, ask *why* it is important and to *whom*. *How* does it relate to what is already known?
- When working with patients, ask *what* might work best for them and *when* it should be done.
- When sharing important information with a classmate or co-worker, ask yourself *what* you know about this person that will help you communicate most effectively.
- When working in a health care facility, consider *how* your work habits might be changed to improve overall efficiency.

Some students believe that the role of their instructors is to tell them rather than ask them. In reality, instructors who continually ask questions that require students to explain their answers and actions are encouraging them to learn and to think like health care professionals. Some instructors even respond to a student's question with another question. Their intention is to teach students to begin to think for themselves and trust that they are capable of finding the answer. Instructors also use questioning to guide students in pulling known facts together, making connections, and applying what they know to new situations. For example, suppose that a respiratory therapy student is working with a hospitalized patient. He has studied the illness presented by the patient and knows how to perform the prescribed breathing treatments. Through questioning, the instructor guides this student to explain why these particular treatments have been prescribed. The student is encouraged to consider the nature of the illness and the properties of the treatments and medications, and draw conclusions about the relationships among these factors.

GETTING THE MOST FROM YOUR STUDIES

If necessary, spend some time now working to improve your study skills: taking notes, reading, writing, and preparing for tests. Something to keep in mind is that these skills can also help you to get a job and succeed. For example, taking a patient history requires good note-taking skills; understanding the instructions for a piece of equipment requires the ability to read and understand technical material; preparing a letter asking about job openings requires good writing skills; and if you think about it, everything you do when working with a patient is a test, something you must do correctly "to pass".

وزارة التعليم
Ministry of Education
2023 - 1448

GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 21 14/06/2023 10:26

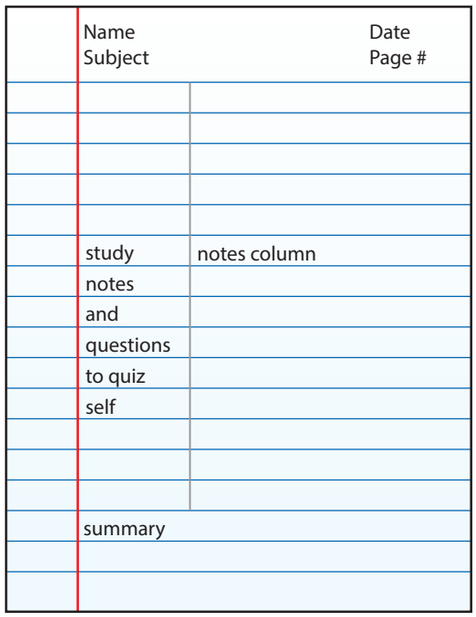

FIGURE 1–3 Page set-up for an efficient note-taking system.

The following suggestions may help you to:

- **Take good notes:** Concentrate on writing down the important points, rather than everything the instructor says. Write in outline form to keep notes organized. Set up pages to leave space for adding notes and questions after class when you review your notes (**Figure 1–3**).
- **Read for comprehension and learning:** When reading textbooks or information on websites, start by skimming through the chapter or section. Then focus your attention by creating questions and reading for the answers. Ask yourself the questions and try to answer without looking at the text.
- **Write clearly and accurately:** Use logical organization and pay attention to detail, including spelling, grammar, and format. Check your writing for errors.
- **Prepare for tests:** Plan to study every day, even for a short time. Reviewing material over time is much more effective than cramming at the last minute.

VOLUNTEERING

If you have the time, volunteering is an excellent way to jump-start your career. Not only do you learn skills, such as working with others, you also learn more about the health care field and acquire information that can help you choose a career that is right for you. Although work in a health care environment is optimal, volunteering for nonprofit organizations also provides good experience.

Some educational programs have an admission requirement that you have some experience in the field you are entering. When looking for a job, you can list on your resume the skills you learned through volunteering. This also shows potential employers that you have initiative and a sincere interest in helping others.

The National Volunteer Portal (*https://www.vision2030.gov.sa/en/explore/explore-more/national-volunteer-portal*) includes many volunteering opportunities. Students using the portal can add their volunteering hours to their records.

وزارة التعليم
Ministry of Education
2026 - 1448

PROFESSIONAL ORGANIZATIONS

Joining a professional organization while you are a student gives you networking opportunities, a chance to learn how to be successful in your chosen field, and access to workshops and other learning activities. And, as with volunteering, putting a professional membership on your resume demonstrates your interest and initiative.

checkpoint

1. How can you demonstrate that you work well with others?
2. How should you take notes?

1:2 LEARNING TO THINK LIKE A HEALTH CARE PROFESSIONAL

A common problem in health care today is that some graduates spend months, or even years, accumulating information, but are unable to apply it when they need it on the job. The lack of effective thinking skills is a primary reason for this unfortunate situation. Regardless of the health care area or occupational level chosen by students, it is essential that they learn to think like health care professionals. This type of thinking actually involves many skills and, in this text, has the following meanings:

- Learning for understanding, not simply to memorize facts.
- Applying learned material to new situations.
- Having an organized approach to problem-solving.
- Basing decisions on facts, rather than on emotional reactions or biases.
- Drawing on many facts and creating relationships among them.
- Locating reliable sources of information with which to make decisions.
- Basing decisions on ethical principles.
- Practicing good communication skills when gathering and distributing information.
- Understanding exactly what you are legally allowed to do in your profession, known as "**scope of practice**".

Thinking proficiently can be applied to the personal, as well as professional, areas of your life. Thinking like a health care professional can be described as an "examined process". This means not simply accepting situations without observing and considering the meaning of what is observed. Effective thinkers are aware of their thoughts and of why and how they are acting or making decisions.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 23 14/06/2023 10:26

Nothing in health care work can be done routinely and without thinking. Mindless actions occur as the result of not paying attention or basing decisions on ideas that have been accepted "just because". These ideas may come from family members, friends, personal experiences, television, movies, and magazines. Health care professionals must learn to think for themselves, gather facts, and use their own observations for making decisions.

THE PROBLEM-SOLVING PROCESS

Important applications of thinking skills are problem-solving and decision-making, two very important competencies for health care professionals. There are a variety of problem-solving and decision-making models. One approach is a five-step **problem-solving process** to help students and health care professionals to approach problem-solving in an organized manner (**Figure 1–4**):

1. Identify the problem.
2. Gather information.
3. Create alternatives.
4. Choose an alternative and take action.
5. Evaluate and revise as needed.

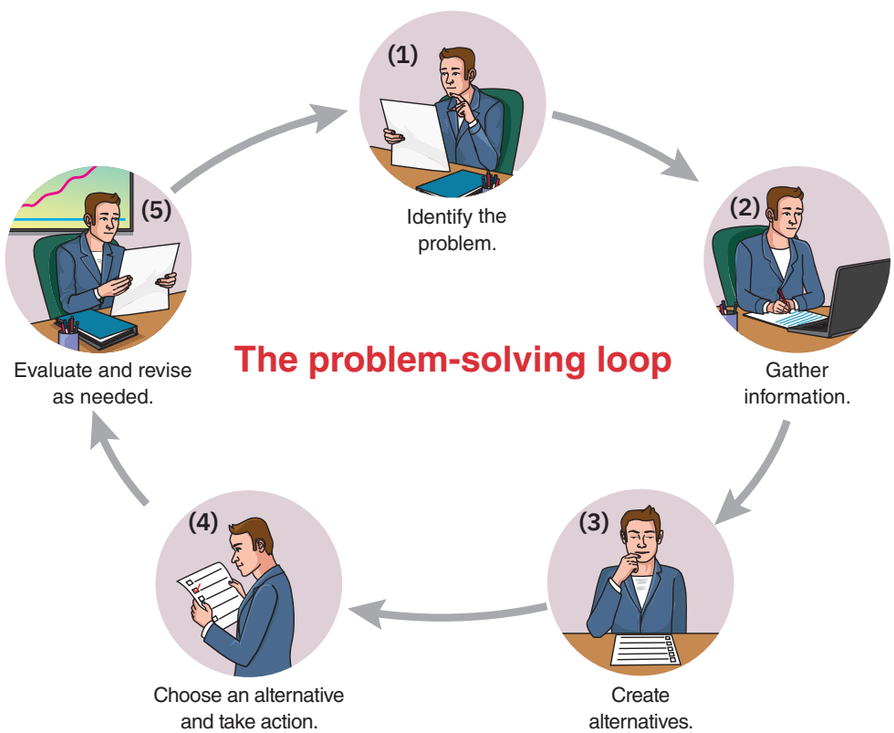

FIGURE 1–4 Steps in the problem-solving process.

وزارة التعليم
Ministry of Education
2016 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 24 14/06/2023 10:26

Step 1: Identify the Problem

Identifying problems is not always as simple as it sounds. Factors that are described as the problem are often only symptoms of the problem. For example, Haya, a radiologic technologist, does not receive the high scores she had hoped for on her performance review at work. When she receives the rating "poor" in the dependability category, she feels upset and believes that her problem is "receiving a poor evaluation because her supervisor dislikes her". Identifying the real nature of problems requires a willingness to observe, pay attention, and confront difficult issues. Problem-solvers must look beyond what seems obvious and use questions effectively to identify the real situation. Denying or ignoring problems does not make them go away. Problems that are not addressed tend to get worse because no action is being taken to resolve them.

Haya's first reaction is, "I can't help it. My car is old and breaks down a lot." When her car won't start, she must rely on family and friends to drop her off at work. Their schedules are not the same as Haya's, so she often arrives late.

Taking the time to think about what she has said ("I can't help it."), Haya realizes that being at work on time is her responsibility. She is now able to identify the real problem: lack of reliable transportation. This enables her to start seeking effective solutions. Accepting responsibility for a problem makes it possible to start doing something about it.

Step 2: Gather Information

Good problem-solving is based on having accurate and reliable information. Acting on assumptions (untested ideas), opinions (beliefs not based on facts or knowledge), and emotions can result in poor decisions. In health care, gathering information is also known as **assessment**. There are many methods for gathering information:

- Review what is already known: What knowledge do I have about the problem or situation? About the causes? About possible solutions?
- Collect **objective data**: What can be observed? Measured? Tested? What are the facts? When working with patients, objective data are called **signs**.
- Collect **subjective data**: How do I feel about a situation? What do I want? What do others want? When working with patients, subjective data refer to what is reported by the patient, such as pain and feeling nauseated. Also known as **symptoms**, they cannot be directly observed or measured by the health care professional, but must nevertheless be taken into account.
- Conduct research: What are the facts? Are they from a reliable (trustworthy) source? How do I know? Are they scientifically based? (Can they be tested?)

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 25 14/06/2023 10:26

- Ask for help: Who has useful knowledge? Are there experts available who can give me reliable information and help me find a solution?

When she starts out, Haya finds the idea of solving her transportation problem overwhelming. The only solution that makes sense to her is buying a new car, but she knows that most likely she cannot afford one at this time. When she puts her fear aside and commits herself to gathering information, she discovers the following:

- Carpools have been organized at the facility where she works.
- The most economical new car for sale in her area costs SAR 60,000.
- There are many articles on the Internet about how to buy a car.
- A cousin has an older car that she wants to sell.
- A local college offers a workshop that teaches people how to buy a car.
- The local high school has a car mechanic training program. For a small fee, students will check over used cars before they are purchased.

Step 3: Create Alternatives

The third step in problem-solving is to create a list of alternatives. Ideas for solutions and actions are generated based on the information collected. All possibilities should be considered before one is selected. Some alternatives may prove, on further investigation, to be impractical or unworkable. It is essential to think through each one and consider the likely consequences, both positive and negative.

Based on her research, Haya creates the following list:

1. Take the workshop on how to buy a car, then purchase a used one. The monthly car payments and higher insurance rates will mean having to budget carefully to meet all expenses. Chances of buying a poor-quality car can be reduced by using the service offered at the high school.
2. Continue to rely on others for rides to work. (Nonaction is also an alternative.)
3. Ask her father for a loan to buy a new car. While Haya would like to have a shiny new car, she has been financially independent for several years and prefers to remain that way.

Some potential alternatives do not appear on the previous list because of information acquired during step 2:

- Carpool participants must have a reliable vehicle of their own. This might be an alternative later, if she purchases a dependable car.
- Her cousin's car has more than 175,000 kilometers and is not one of the more reliable models, according to the reports she studied.

وزارة التعليم
Ministry of Education
2016 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 26 14/06/2023 10:26

Step 4: Choose an Alternative and Take Action

Step 4 is critical. A common difficulty in problem-solving and decision-making is failure to act. Opportunities are missed and accomplishments not realized when there is no follow-through.

Haya decides to combine two alternatives. She will continue to rely on others for rides to work. She plans to buy a used car next year. In the meantime, she will create a personal budget to control expenses and save money, and will learn more about how to buy a car and which model is likely to give her the best value.

Step 5: Evaluate and Revise as Needed

Evaluation means reviewing the results of the actions taken. Even well-thought-out plans can prove to be ineffective or have unexpected, negative consequences. And circumstances can change. It is sometimes necessary to make adjustments or choose another alternative. It may even require going back to step 2 to gather additional information and go through the process again.

When applying the process to health care work, it is important to remember that the needs of patients and facilities may change or additional information may become available. This can affect the process and force revisions to be made before the entire process has been completed. Problem-solving is a continual process.

MAKING A CAREER DECISION

There are hundreds of job titles in health care and the number continues to grow. They require a wide range of skills and abilities. Students who are considering a career in health care should learn as much as possible about the requirements, responsibilities, and conditions of their areas of interest. This knowledge will help them to make good career choices that match their preferences and abilities. For example, some individuals interested in health care would find the emergency medical technician's (EMT) job to be interesting and exciting. EMTs have opportunities to apply their skills to help others in significant ways, sometimes even saving lives. At the same time, the work is physically and emotionally demanding. It is often performed under difficult circumstances. Emergencies do not happen at convenient times and places. The schedules for EMTs include nights, weekends, and holidays, and they are called out to work in all types of weather conditions. All aspects of an occupation must be considered to increase the chances of choosing a career that will provide long-term satisfaction.

When choosing an occupation, students should carefully consider the following factors about themselves:

- Educational background.
- The amount of additional time they can dedicate to their education.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 27 14/06/2023 10:26

- Natural abilities.
- Personality traits.
- The type of activities they most enjoy.
- Preferences for workplace environment and conditions.

checkpoint

1. What do you need to show to identify the real nature of a problem?
2. What is one common difficulty in problem-solving and decision-making?

1:3 THE COMMUNICATION PROCESS

Communication is the process in which messages are exchanged between a sender and a receiver. The **sender**, also referred to as the *speaker*, is the person who creates and delivers a message. The **receiver**, also called the *listener*, is the person to whom the sender directs the message. Communication is successful when the receiver interprets and understands the sender's message as it was intended. Good communication is essential for the delivery of safe, effective health care **(Figure 1–5)**. Modern health care systems rely on the efficient and accurate delivery of large amounts of information. Diagnoses and treatments are usually based on a variety of data that must be shared among many health care providers. There are vast networks of primary care providers, specialists, therapists, testing centers, medical facilities, and insurance companies that work together to provide and coordinate patient care. Chances of miscommunication increase as systems become larger and more complex.

FIGURE 1–5 Good communication between members of the health care team is essential for providing good patient care.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 28 14/06/2023 10:26

Good face-to-face communication is also essential. It is reported that the root cause of nearly 66% of medical errors is the result of poor team communication. Health care professional dissatisfaction and turnover also increase when there is poor communication among staff.

COMMUNICATION WITH PATIENTS

The ability to communicate well can be as important to the professional success of the phlebotomist as her ability to safely draw blood. The well-being of patients depends on more than technical competence. For example, if a nurse is instructing a patient about how to change the dressing on a wound, the patient's understanding of these instructions is critical for successfully carrying out self-care practices at home. Studies have shown that health and treatment outcomes are significantly influenced by the quality of communication between patients and health care providers.

Several factors have increased the need for competent communication:

- Significant decrease in the length of time patients spend in hospitals and other health care facilities: Patients are now more responsible for their own follow-up care and need clear instructions to correctly carry out necessary self-care procedures.
- Shift in major causes of death from infectious diseases to cancer, heart disease, chronic obstructive pulmonary disease, and stroke: There has been an increase in chronic illness because people are living longer. An important part of the health care professional's responsibilities is providing patient education about factors that promote wellness.
- New medications: Many patients take a large number of medications and this makes it more difficult for them to organize and take them properly.

The attitudes of health care professionals influence their ability to communicate effectively with patients. Therefore, the first step in achieving excellent communication skills is to develop respect for, and an understanding of, individual patients and their needs. Effective communication involves more than applying a set of techniques. It must be based on sincere compassion and concern for patients and their welfare (**Figure 1–6**).

The health care world can be intimidating for patients. They may be anxious about receiving negative test results and learning that they have serious medical conditions. Or they may fear experiencing pain and discomfort during treatments. Still others are worried about losing control over portions of their lives as a result of their physical conditions. These concerns, combined with the physical stress caused by illness or injury, can negatively affect patient recovery. Health care professionals can

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 29 14/06/2023 10:26

help relieve patient stress by showing compassion, providing appropriate information, and answering questions. Good communication has been shown to increase the speed of patient recovery.

Another factor that affects communication with patients is the patient's ability to obtain, process, and understand basic health information and services needed to make appropriate health decisions. Patients may not understand what their health providers are telling them orally, but may be too embarrassed to admit that they miss what is said. When patients are not comfortable expressing these concerns to their health care providers, there is no opportunity to address them. Good communication skills, discussed in this chapter, can assist health care professionals to better help their patients discuss their concerns.

FIGURE 1–6 Good communication skills, combined with sincere caring about others, are essential for effective patient care.

وزارة التعليم
Ministry of Education
2023 - 1445
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 30 14/06/2023 10:26

THE PROCESS OF COMMUNICATION

Messages can be exchanged in at least four ways:

1. Orally.
2. Nonverbally.
3. In written form.
4. Electronically.

It is commonly believed that oral communication consists of simply talking and listening, activities that most people have been doing all their lives. We carry on dozens of conversations daily with family members, friends, classmates, and co-workers. Effective communication in health care, often referred to as **therapeutic communication**, is specifically aimed at meeting the needs of patients. It involves the application of a set of skills that can be acquired through practice.

In this text, communication is organized into a six-step process. This process provides a structured approach for studying and learning the skills that make up effective communication. Like other health care skills, communication cannot be taken for granted or performed in a routine manner. Each communication encounter presents its own set of circumstances and requires the health care professional's full attention.

THE SIX STEPS OF THE COMMUNICATION PROCESS

1. **Set communication goals:** Determine what is to be accomplished. This requires considering the receiver's specific needs and current circumstances, and the duties that have been assigned to the health care professional.
2. **Create the message:** Select and organize appropriate content based on the communication goals and characteristics of the receiver.
3. **Deliver the message:** Choose the delivery method best suited for ensuring that the receiver will understand the message.
4. **Listen to the response:** Employ listening and observational techniques to determine whether the message was received as intended.
5. **Offer feedback and seek clarification:** Rephrase what you hear, ask questions or use teach back (asking receivers to explain what you have said in their own words) to check the receiver's understanding of the message.
6. **Evaluate the encounter** and revise the message if necessary: Determine whether the goal was met. If not, why not? What other options are available? What should be the next step?

These steps are illustrated in **Figure 1–7**.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 31 14/06/2023 10:26

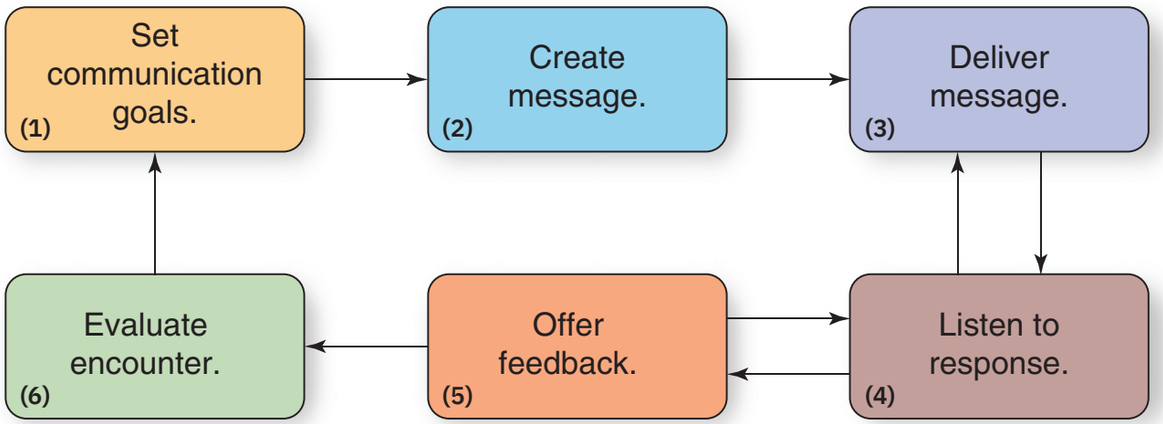

FIGURE 1–7 The six steps in the communication process.

SETTING COMMUNICATION GOALS

Much of our everyday communication is spontaneous and superficial, and requires little or no planning. This includes everyday greetings ("Hi, how are you?"), which are said automatically and from which little real information is usually expected. Interactions in health care settings are more purposeful. Suppose a nurse has a goal of learning about the current health status of a patient. Instead of asking the patient, "How are you?", which may result in a programmed response of "Fine," she needs to ask more specific questions. These will be based on communication goals. Examples of specific questions include the following:

- On a scale of 1 to 10, what is your pain level?
- Do you have any questions about your care?
- Are you feeling nervous about the procedure?

Here are some examples of health care goals:

- Gather information about a patient's condition.
- Instruct individuals on postoperative home care procedures so family members can understand and follow them correctly.
- Inform a patient about the benefits of the recommended treatment.
- Report patient care information to a colleague who is taking over the care of the patient.

In addition to goals that are specific to the situation, there are three more that should be included in every interaction with a patient:

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 32 14/06/2023 10:26

1. Demonstrate sincere concern for the patient's welfare:
   - Have a warm smile.
   - Use a gentle manner.
   - Do not act hurried.
   - Listen carefully.
2. Establish trust:
   - Establish eye contact as culturally appropriate.
   - Explain why a procedure, treatment, or test is necessary.
   - Explain in advance everything you are going to do.
   - Follow through with anything you say you will do (return in 5 minutes, call the patient to check on their progress, and so on).
3. Enhance the patient's self-esteem:
   - Involve the patient in decision-making whenever possible.
   - Clarify the patient's communication if you're unsure of meaning.
   - Address the patient properly and respectfully.
   - Provide for privacy.
   - When appropriate, ask the patient for input on how he or she wants things done.

It may seem unrealistic to try to achieve these goals in the brief time the health care professional spends with patients. There are other tasks to accomplish, such as taking a blood sample or performing a breathing treatment. Good communication, however, depends more on quality than quantity. A warm smile and informative reassurance are not time-consuming and can be included in any encounter. Patients today receive much of their care from strangers who are in a hurry. It is for this very reason that an effort should be made to personalize interactions as much as possible.

COLLECTING INFORMATION

To set appropriate goals, collect and review information that might affect communication. The following factors should be considered:

- The patient's level of understanding:
  - Is the patient very young?
  - Does the patient speak or understand Arabic?
  - Does the patient have a learning disability that affects their ability to understand?
  - Does the patient appear to be confused or disoriented?

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 33 14/06/2023 10:26

  - What is the patient's ability to retain information? Is there short-term memory loss?
  - What is the appropriate terminology to use?

- Emotional factors:
  - Does the patient's behavior indicate fear or anxiety?
  - Are there signs that the patient is using a defense mechanism?
  - Is the patient ready to accept the information that is to be offered?

- Physical factors:
  - Is the patient in pain?
  - Is the patient on medication that causes drowsiness or affects their ability to concentrate?
  - Does the patient have a hearing, visual, or speech impairment that affects the communication process?

- The urgency of the communication:
  - Must the communication take place now?
  - Is this the appropriate setting for the communication?
  - What are the consequences if the communication does not take place or if it is unsuccessful?

Learning to make these determinations quickly is an important health care skill that is developed over time. One technique for new health care professionals is to use mental checklists to help them prepare for communication encounters.

CREATING THE MESSAGE

Creating an appropriate message requires the selection of content and use of language that is based on the answers to the questions listed earlier. Health care communication usually takes place at a deeper level than everyday conversation and must be clear and accurate. It may involve sharing very personal information, such as a patient's fears.

Information must be presented in a manner that the receiver understands. For example, although the use of medical terminology helps ensure accuracy in communications with other health care professionals, it can confuse and intimidate patients. Even everyday language may have to be simplified for some patients, depending on their age and language skills. At the same time, take care not to talk down to patients.

Organize long messages to make them easier to follow. Here are some examples of organizational strategies:

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 34 14/06/2023 10:26

- Explain what you plan to do and what the patient should expect to hear, feel, and so on.
- Rank information in order of importance.
- List a sequence of steps for the patient to follow.
- State facts, following each one with an explanation.
- Present an overview of a procedure before detailing the individual steps.
- Give instructions along with a description of possible consequences if they are not followed.
- Break information into sections if possible, so the patient can grasp each part or set of facts before moving on to the next.
- Use teach back: Have patients demonstrate understanding by explaining the information in their own words or by performing the task or exercise being taught.

ASKING QUESTIONS

Some messages are phrased as questions. Types of questions include:

- **Closed questions** can be answered with a single word or a response of "yes" or "no". This type of question is used to gather factual information. For example, the health care professional may ask closed questions when obtaining background information about a patient. Closed questions are not recommended when checking for understanding. Many patients will answer "yes" to the question, "Do you understand?" even if they do not. They are afraid of appearing dumb or do not want to "bother you" by having the information repeated. Examples include: "Is it your birthday today?" "Are you taking any medications?"
- **Open-ended questions** cannot be answered with a simple "yes" or "no". They require a more complete response and are used to encourage patients to provide more detailed information or explanations. These questions can be used to learn about the patient's symptoms, to encourage them to share feelings and opinions, or to check understanding of the message. Example questions are: "How did you fall?" "Why do you think you are feeling sad?"
- **Probing questions** are requests for additional information or clarification. For example, they can be used to lead patients to more fully discuss their symptoms. If a patient states, "My stomach hurts," appropriate probing questions would inquire about the exact location and type of pain, when it first occurred, and when it is

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 35 14/06/2023 10:26

experienced. It is important not to confuse the purposeful use of probing questions with digging for unnecessary personal details, which patients may find offensive. Example questions include: "You said that you've been experiencing pain in your chest. Where exactly in your chest do you feel the pain?" "When is the pain the most severe?" "Can you tell me more about when you get these headaches?"

- **Leading questions** are those in which all or part of the answer is included in the wording of the question. Leading questions should be avoided when they encourage the receiver to give the answer believed to be correct or what the health care professional wants to hear. However, leading questions can be useful when used with patients who have difficulty speaking or who do not understand the language well enough to phrase a complete answer. In these situations, take extra care to check for understanding to ensure that the patient is not simply agreeing with you. Examples are: "Would you describe the pain as sharp, dull, throbbing, or aching?" "Do you feel more nauseated in the morning, afternoon, evening, or during the night?"

After asking a question, it is important to pause and give the receiver sufficient time to respond. Some people need more time than others to formulate answers. Do not interrupt or finish sentences for patients. If it is obvious that they do not understand the question or are unable to reply, reword the question and provide another opportunity for a response. Consider the state of each patient and his or her ability to answer questions. For example, Sara is an elderly patient who has difficulty remembering. Hospitalized for severe back pain, she cannot accurately respond to questions about how she is feeling today compared with yesterday. A more effective way to get the needed information is to ask her to rate her pain level on a scale of 0–10, with 0 being no pain and 10 being the highest level she can imagine.

DELIVERING THE MESSAGE

It is important to first determine to whom the message should be delivered. This is not always obvious. For example, if the patient is a child or elderly person, should communication be directed to the patient or to a family member? Patients who are able to understand any or all of the message should be addressed directly. Detailed information or instructions can also be given to a family member later. For example, a medical assistant who greets 87-year-old Fatima by asking her daughter, "How is Fatima doing today?" is failing to show respect for the patient.

It is believed that many patients who cannot speak or respond can hear and experience touch. Under these circumstances, health care professionals can provide comfort by maintaining communication.

وزارة التعليم
Ministry of Education
2016 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 36 14/06/2023 10:26

FIGURE 1–8 Speak reassuringly and consider making appropriate physical contact, such as touching the patient's hand or shoulder when speaking.

FIGURE 1–9 Positive body language conveys interest, caring, and the willingness to listen.

They should speak reassuringly and consider making appropriate physical contact, such as touching the patient's hand or shoulder when speaking (**Figure 1–8**).

NONVERBAL COMMUNICATION

Nonverbal communication includes tone of voice, body language, gestures, facial expressions, touch, and physical appearance. Up to 70% of the meaning of messages are expressed nonverbally. Nonverbal communication is usually the most accurate expression of what the sender truly feels and believes. This is because it comes from within and is conveyed without the awareness of the sender. It takes place subconsciously.

Health care professionals must be aware of the nonverbal communication of both themselves and others. The nonverbal communication of patients should always be observed. For example, if a patient reports feeling "fine" but appears very tense and nervous, the verbal and nonverbal messages do not match. In such cases, the health care professional needs to observe carefully, ask questions and provide opportunities for the patient to share what he or she is really experiencing.

The appearance of the health professional is a form of nonverbal communication. It can influence the patient's confidence in the worker's competence, which, in turn, can affect how messages are perceived.

BODY LANGUAGE

Body posture and movements convey messages. Some **body language** can have a negative impact on the receiver. Examples include crossing the arms, shrugging the shoulders, tapping the fingers or feet, clenching the fists, and rolling the eyes. These can communicate disagreement, lack of interest, disbelief, and impatience.

Positive body language conveys interest, caring, and the willingness to listen to the sender's message, even if there is disagreement (**Figure 1–9**). It encourages sharing information and promotes exchanging honest messages. Positive body language includes the following:

- Looking at the other person.
- Directing the body toward the other person.
- Leaning slightly toward the person being addressed.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 37 14/06/2023 10:26

- Holding the body in a relaxed position.
- Nodding or verbalizing ("uh huh", "yes", "tell me more") occasionally to indicate acknowledgment.
- Having open and warm facial expressions.
- Approaching the patient, if standing at a distance.
- Stopping the performance of tasks to give your full attention.

Positive body posture communicates, "I am focused on, and paying attention to, you and what you are saying." Actions must match words. For example, if a patient wants to discuss a sensitive matter and the health care professional listens while facing toward the door, the message to the patient may be, "I'm really in a hurry to leave." In another example, a health care professional wants to reassure a patient, but looks away nervously while speaking. The message will seem false and the patient will sense that important information, possibly negative, is being left unsaid. Establishing trust, an essential ingredient in effective communication, requires that spoken and nonverbal communications match.

- **Mime** (body movements that convey ideas or actions) can communicate when speaking is not possible or when the patient does not understand the language. For example, acting out the movements a patient must make when performing an exercise can demonstrate exactly what needs to be done.
- **Gestures** are helpful when patients cannot be attended to immediately. Acknowledging their presence conveys respect and creates good will. For example, if the medical receptionist is speaking on the telephone when a patient arrives for an appointment, the patient should be greeted with a smile, nod of the head, and quick hand gesture to indicate that he or she will be attended to shortly.
- **Facial expressions** are an important form of nonverbal communication. The health care professional's expressions can be a source of reassurance or anxiety for patients, so it is important to learn to be aware of, and control, them. This can be difficult when dealing with situations that are challenging, unpleasant, or offensive. For example, you may feel very frustrated with the behavior of an angry patient. Efforts at calming the patient will be less effective if your face reflects signs of impatience and annoyance. The health care professional's face should reflect warmth, confidence, and interest in the welfare of the patient.
- The use of **touch** has become a difficult issue in health care today. Many health care activities require entering personal space that is normally reserved for only the closest and most trusted people in the patient's life. It is important that patients be told what is to take

وزارة التعليم
Ministry of Education
2016 - 1438
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 38 14/06/2023 10:26

place and why. Explain what they should expect to see, hear, and feel (**Figure 1–10**). For example, when administering an injection, the health care professional should inform the patient of its purpose, where it will be given, and what sensations might be experienced.

PHYSICAL ENVIRONMENT

The physical environment and how the health care professional is positioned in relation to the patient can affect the delivery of the message. Sitting behind a desk or standing over the other person projects a sign of authority or dominance. Other factors to consider include the following:

- **Light sources:** Can the patient see you clearly? Is there a glare on anything the patient is expected to see? Is light shining in the patient's eyes?
- **Sounds:** Can the patient hear you clearly? Are there unnecessary noises that are distracting? Should the television or radio be turned off?
- **Privacy:** Are there other people in the area who can hear the communication? If privacy is necessary, how can it be arranged? Are you speaking directly to the patient and only as loudly as necessary?
- **Activity:** Do you appear to be more focused on taking notes or entering data into a computer than on the patient?
- **Comfort:** Is the patient exposed or in an awkward position? Can communication wait?

FIGURE 1–10 Explain what the patient should expect to see, hear, and feel during an examination.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 39 14/06/2023 10:26

LISTENING TO THE RESPONSE

Listening is not passive, but an active process that requires concentration, attention, and observation. Hearing and taking in words take place at a rate that is several times faster than the rate of speech. This is helpful when taking notes, but it also allows time for the mind to wander. **Active listening** is characterized by focusing fully on what the speaker is saying.

Effective listening can be hindered by the receiver's reactions to what the sender is saying. For example, if the receiver strongly disagrees with the message, their mind may become occupied formulating mental arguments instead of listening carefully. Another common interference to listening is thinking about how one is going to respond when the speaker stops talking. The mind becomes engaged in self-talk and stops listening.

Good listening also requires that receivers do not interrupt senders or complete messages for them. Allow enough time for senders to complete their messages. Encouraging remarks and gestures may be used as prompts: "I see," "Go on," or a nod of the head. Interrupting, however, can convey a lack of respect and impatience. It can also distort the sender's intended message, preventing important information from being conveyed.

Effective listening skills can be developed. Start by becoming aware of lapses in your attention. When you realize you are losing focus, bring your mind back to the speaker. With practice, you can decrease internal interference and poor attention.

- Clear your mind of distractions.
- Face the sender.
- Focus your full attention on the sender.
- Maintain eye contact as appropriate.
- Turn off "self-talk".
- Do not make value judgments about what you hear.

Periods of silence can be a meaningful component of communication. The purpose of health care encounters is not to maintain a steady stream of conversation, but to help patients solve their health problems. Silence allows time for thought and reflection. It also provides a chance to observe the nonverbal communication that takes place during silence. Some cultures have a high respect for the value of silence. Allowing periods of silence may feel awkward at first, but they can be a valuable tool in promoting good communication.

وزارة التعليم
Ministry of Education
2016 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 40 14/06/2023 10:26

FEEDBACK

Feedback is a method used to check understanding of what is said. Did the message come across as the sender intended? All of us have had the experience of believing that we understood a message perfectly, only to discover later that we had misinterpreted it. Obtaining feedback helps avoid misunderstandings. Here are four ways to obtain feedback:

1. **Paraphrasing:** The receiver rewords the sender's message in the receiver's own words and then asks the sender for confirmation. *Example*: "I understood you to say that you have experienced these headaches every day for the past two weeks. Is that correct?"
2. **Reflecting:** This is similar to paraphrasing but prompts the receiver to complete or add more detail to the original message. *Example*: "You say that it's difficult for you to do the exercises the therapist has recommended because …" (pause and allow time for the receiver to respond).
3. **Asking questions:** Request clarification and additional information. Many words, such as "difficult", "painful", and "a lot", have different meanings for people. In health care, the use of questions can help patients describe their conditions more clearly. Accurate diagnoses and appropriate treatments depend, in part, on the clarity and completeness of information supplied by the patient.
   Example: "What symptoms are you experiencing when you say you are feeling terrible?"
   Questions can be used to check the receiver's understanding of important information. Instead of asking if the receiver understands, ask a question whose answer will demonstrate understanding.
   Example: "Can you list for me the three steps you'll take when giving your son his medication?" This is an example of teach back.
   Open-ended questions can be used to encourage patients to talk about their values and beliefs. Although it is not the role of the health care professional to make value judgments about patients, what is learned can help you better understand the behavior and motivations of patients, and find ways to meet their needs.
   Example: "Why do you say that you deserved to have the accident?" This question may help in understanding why a patient is making no effort to perform the exercises that will assist in recovering from injuries.
4. **Requesting examples:** Examples can help to more clearly explain and fill in meaning.
   Example: "Tell me about the kind of situations in which you feel lightheaded."

Establishing clear channels of communication by using feedback also helps maintain good relationships with co-workers and supervisors. Developing competence as a health care professional requires monitoring personal progress and learning from mistakes. Feedback can be an important

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 41 14/06/2023 10:26

tool for fostering professional growth. For example, Hamad's supervisor informs him that a report he has prepared is "unacceptable". Hamad can request more specific feedback by asking questions such as, "What did I do or not do that made my performance on this task unacceptable?" and "Can you tell me exactly what it is that makes the report unacceptable?" These questions will encourage the supervisor to be specific and provide details from which Hamad can learn.

EVALUATING THE ENCOUNTER

The purpose of evaluation is to determine whether the communication goals have been met, demonstrated by the response or behavior of the receiver. If the goal is not met, the following questions can help identify the difficulty:

- Did I clearly state my messages?
- Did I present them at a level appropriate for the receiver?
- Did I listen actively?
- Which part of the message was misunderstood?

The evaluation process actually continues throughout every communication encounter. A good communicator constantly checks for understanding by listening, observing, and asking for feedback as needed. That way, adjustments can be made as needed.

Some communication goals are achieved over time, and the evaluation must be delayed. For example, if cardiac patient Abdullah is instructed about improving his eating habits, it may be weeks before the dietician finds out if he understood and was motivated to follow the low-fat eating plan. Another example of a long-term communication goal is making an effort over time to improve a relationship with a co-worker.

COMMUNICATION THROUGH THE LIFE SPAN

When communicating with young children, it is important to help them understand what is happening to them and how you are helping them. They may be fearful and need help reducing their anxiety. At the same time, children should be included as much as possible in decision-making and allowed to help with their care when appropriate. As with patients of any age, it is important to listen actively to children and answer their questions using age-appropriate language (**Figure 1–11**).

Adolescents must be treated with respect and dignity. Show an interest in them as individuals by learning about what is important to them. They may be struggling to establish their identity as they move from childhood to adulthood. Do not talk down to them, but fully explain what you are doing and why.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 42 14/06/2023 10:26

FIGURE 1–11 Your communication must be adjusted to the age and other characteristics of the receiver.

Adulthood is a busy time of life with many responsibilities, such as career and family. Illness and injury at this time can be extremely stressful and it is important for the health care professional to listen to patients' concerns. Do not assume that adults understand medical vocabulary, detailed instructions, and preventive measures they should take now to avoid health problems as they age. Use teach back to check understanding.

Older adults may have the most variation among individuals, from those who are active and mentally sharp into their 90s to individuals suffering from dementia (see **Chapter 2**). A goal for the health care professional is to help patients to remain independent as long as possible by providing them with the information they need to maintain their health. They need honest conversations about any chronic conditions as well as help in making end-of-life decisions. Strive for an approach that is respectful but not overprotective.

checkpoint

1. What is active listening?
2. What are four ways to obtain feedback?

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 43 14/06/2023 10:26

1:4 OVERCOMING COMMUNICATION BARRIERS

Obstacles or barriers sometimes block communication. Barriers include the following:

- Language differences.
- Cultural influences.
- Defense mechanisms.
- Physical distractions.
- Sensory impairments.
- Medication effects.
- Pain.

Identifying and overcoming barriers requires the use of empathy, observation, questions, and feedback. Specific techniques can be employed and extra time can be allowed to promote effective communication.

PATIENTS WHO ARE IN PAIN, MEDICATED, CONFUSED, OR DISORIENTED

Patients who are in pain, medicated, confused, or disoriented may have difficulty communicating. Health care professionals can assist them by taking extra time and following these guidelines:

- Identify yourself and say the patient's name.
- Maintain eye contact.
- Speak slowly and clearly in a moderate pitch of voice.
- Use simple language. Avoid slang and expressions that do not mean exactly what they say.
- Keep each message short and to the point. For example, do not give a series of instructions or ask more than one question at a time.
- Give the patient time to respond.
- Use touch if the patient is comfortable with it.
- Try to schedule interactions when the patient is in the least amount of pain.
- Repeat the message as needed, without changing the content or words.
- Review the content with the patient to assess retention of the message.
- When appropriate, give the patient written information that can be referred to later.

وزارة التعليم
Ministry of Education
2016 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 44 14/06/2023 10:26

PATIENTS WITH DEMENTIA

Alzheimer's disease causes up to 80% of cases of dementia, but there are other conditions, such as vascular dementia that can follow a stroke (see **Chapter 2**). In addition to memory loss, dementia decreases the ability to communicate, both in understanding others and expressing oneself orally. Patients may forget the meaning of words and phrases, have difficulty finding the right words, and invent words to express themselves, such as calling a watch an "arm clock". As verbal skills decline, they may rely more on gestures.

Patients may also exhibit difficult behavior, such as name-calling, shouting, hitting, and pushing. Health care professionals must be compassionate and patient, stay calm, and not take this behavior personally. It is also important to continue to communicate with dementia patients in spite of the barriers. The following suggestions may be helpful for maintaining and improving communication:

- Limit distractions and noise.
- Approach patients from the front and introduce yourself.
- Get the patient's attention: establish eye contact and call the patient by name.
- Do not assume that the patient cannot understand or does not want to communicate.
- Maintain a friendly expression.
- Use simple language and short sentences.
- Be patient. Allow long pauses for patients to formulate a response.
- Agree or distract with a different subject when what the patient says does not make sense or is repetitive.
- Respond to the patient's feelings rather than the words.
- Do not confront, argue, or try to reason with the patient.
- If the patient does not understand what you say, rephrase rather than repeating.
- Offer suggestions instead of corrections. For example, if a patient mistakes her brother for someone else, say, "I think this is your brother, Omar."
- If the patient is unable to communicate orally, observe their body language to learn what they want or need.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 45 14/06/2023 10:26

PATIENTS WHO ARE DEPRESSED

It is not uncommon for patients with serious conditions, such as cancer, to be depressed. This is usually a temporary condition, as opposed to clinical depression (a mood disorder that causes persistent feelings of sadness and loss of interest), but it can result in feelings of distress and interfere with the patient's functioning and ability to communicate. Let depressed patients know: "I am here for you." "I'm glad to listen." At the same time, realize that these patients may respond negatively to whatever you say. Specific suggestions for communication include the following:

- Invite, but do not force, patients to talk about their fears, concerns, and how they are feeling.
- Listen carefully without judging.
- Offer hope, but do not advise them to "cheer up" or "be positive".
- Allow for silence.

PATIENTS WHO ARE ANXIOUS

In addition to depression, anxiety is a common experience for patients. Even a visit to the dentist can bring on anxiety for patients who fear needles, pain, or embarrassment about the condition of their teeth. Anxious patients may have difficulty focusing and responding, so exercise patience. Be empathetic and reassuring. At the same time, do not trivialize the patients' feelings by telling them, "It's silly to be anxious," or "There's nothing to be afraid of." Clearly, for the patient, the situation is fearful. Instead, try the following suggestions:

- Approach the patient calmly and with a smile.
- Ask the patient to express his or her concerns.
- Let the patient talk and listen carefully.
- Keep your messages simple and to the point.
- Stick to one topic to make it easier for the patient to follow.
- Use feedback to check the patient's understanding of your message.

PATIENTS WITH HEARING IMPAIRMENTS

Hearing loss affects a significant number of people of all ages. When initiating conversation, especially with older adults, carefully observe the receiver and use appropriate feedback to check for understanding. It is important not to assume that people can hear just because they are not wearing a hearing aid or do not ask you to speak up. Many people who experience hearing loss are unaware of it because it can happen gradually

وزارة التعليم
Ministry of Education
2016 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 46 14/06/2023 10:26

over the years or they are embarrassed to admit it. Following are signs that a person may have difficulty hearing:

- Leaning forward and turning the head.
- Asking you to repeat information.
- Failing to hear when not facing the speaker.
- Not responding to you when you ask a question or finish speaking.

Sign language provides a means of communication for people with significant or complete hearing loss. It consists of hand movements and shapes, facial expressions, and corresponding body postures to convey meaning (**Figure 1–12**).

The following suggestions can significantly improve communication with the hearing impaired:

- Position yourself close to the receiver and speak face-to-face.
- Remove or turn off sources of noise.
- Have the light source directed to your face.
- Make sure your mouth is visible to the receiver.
- Keep your hands away from your face.
- Say the person's name before beginning the conversation.
- Determine whether the person hears better in one ear than the other.
- Introduce the general topic of the conversation.
- Speak distinctly and do not mumble.
- Speak slowly, but naturally.
- Do not shout or exaggerate words. This can make it even more difficult for the person to understand.
- Maintain a low to moderate pitch of voice.
- Use short sentences.
- Watch for signs of comprehension.
- Do not change the subject without warning.

PATIENTS WITH VISUAL IMPAIRMENTS

Patients who have visual limitations need special consideration, too. They do not have visual clues with which to orient themselves physically. With most of the meaning of communication being conveyed nonverbally, it is understandable that the visually impaired person experiences special communication challenges. Here are some ways to improve communication with visually impaired patients:

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 47 14/06/2023 10:26

FIGURE 1–12 Sign language provides a means of communication for people with significant or complete hearing loss.

- Start by announcing your presence and identifying yourself.
- Before starting a procedure, describe any equipment to be used and its position in relation to the patient.
- As you proceed, explain what will be done and where you will be touching the patient.
- Explain what noises the patient will hear.
- Give clear and complete directions. For example, say, “Raise your left arm directly in front of you to a 45-degree angle,” not “Raise your arm like this,” or “Lift your arm.”
- Let the patient know when you are leaving the area.
- If the patient is to leave unaccompanied, give specific instructions about doorways and other landmarks and obstacles, such as uneven surfaces, that the patient will encounter.
- Give extra verbal information to describe anything that would usually be expressed through facial expressions, gestures, head nods, and other movements.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 48 14/06/2023 10:26

PATIENTS WITH SPEECH IMPAIRMENTS

Patients may be unable to speak because of an injury, stroke, or other neurological condition. The condition may be temporary, such as when on a ventilator or using an artificial airway. Patients who are unable to express themselves can become anxious, frustrated, and even panicked. Communication can be aided by the use of mime, pictures and drawings, writing, and specially designed communication boards that have the most common patient requests to which they can point.

Aphasia is a condition in which individuals have difficulty understanding or producing language. Problems vary from mild deficits, such as difficulty finding the correct word, to severe deficits in language comprehension and production. The main cause of aphasia is stroke. It may also be the result of loss of brain function, as happens with Alzheimer's disease. Here are some ways to improve communication for people with aphasia:

- Remove noise and distractions.
- Use adult language. Do not treat patients as if they were children.
- Ask "yes" and "no" questions.
- Give clear choices for possible answers.
- Use visual cues, such as picture cards.
- Encourage the patient to communicate with you through gestures and drawings as well as speech.
- Check for understanding.

PATIENTS WHO ARE ANGRY

Anger is the emotional response of displeasure or extreme annoyance to a perceived wrong. The loss of personal control experienced due to illness or injury, worries about the expense of health care, and the inconvenience of having to wait for service can all result in patient anger. Anger can also be caused by problems unrelated to health care, such as family difficulties or the loss of a job.

When dealing with an angry patient, try to determine the cause. In most cases, the anger is not the fault of the health care professional. Anger may be a form of displacement in which the patient is unable to direct anger at the real cause. However, if you discover that you have done something to upset the patient, apologize sincerely and try to establish good communication aimed at meeting the patient's needs. The following guidelines are helpful when dealing with angry patients:

- Do not respond in anger or argue with the patient.
- Remain calm and courteous.
- Listen attentively to the patient's concerns.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 49 14/06/2023 10:26

- Offer a sincere apology if necessary.
- Do not raise your voice.
- Be aware of your own body language. Look at the patient.
- Express concern and interest, not annoyance.
- Answer the patient's questions.
- If you cannot resolve the problem, discuss it with your supervisor or other appropriate person.
- If the patient is being verbally abusive, state politely that you are willing to listen but will not tolerate cursing or threatening language.
- Ask for help from a co-worker or security if necessary.

PATIENTS WHO DO NOT SPEAK ARABIC

Imagine yourself as a tourist in a country whose language you do not speak and where the health care practices are different from those of your country. You are involved in an accident and taken to a hospital where no one speaks your language. You cannot explain your needs, and the treatments are different from anything you have ever experienced. Health care professionals can demonstrate compassion and care for these patients by learning at least a few common phrases of the major languages spoken in their community. In addition, the following ideas are helpful when working with non-Arabic-speaking patients:

- A smile is a universal sign of good will.
- Determine if the patient speaks or understands any Arabic or English.
- Find out if a family member or friend who speaks Arabic or English is available to help. (Be sure that the patient agrees to have the other person involved so that confidentiality is not violated.)
- Speak slowly and clearly.
- Do not raise your voice. It will not help the other person understand.
- Use simple words and sentences.
- Do not use slang or expressions that may be misunderstood.
- Try repeating your message in different words.
- Use gestures and mime to demonstrate what you need the patient to do.
- Write the message.
- Use pictures if available.
- Request the services of an interpreter if necessary.

وزارة التعليم
Ministry of Education
2016 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 50 14/06/2023 10:26

checkpoint

1. How should a nurse respond to an anxious patient?
2. What is the best way to deal with an angry patient?

1:5 UNDERSTANDING THE PATIENT AS AN INDIVIDUAL

Treating each patient as an individual is an essential component of good care. It is important to help patients to retain their dignity; strive to acknowledge their experiences and needs during the stressful period of illness or injury. The effectiveness of the health care professional's interactions and communication with patients depends to a great degree on understanding and respecting people's individual differences. Being sensitive to the variety of perceptions that patients bring to the health care setting enables health care professionals to better meet patient needs. There are a number of ways to learn about patients as individuals:

- Observe the patient's behavior and ways of interacting with others:
  - Eye contact.
  - Degree of formality in conversation and body movements.
  - Outward signs of emotions such as nervousness, fear, or suspicion.
  - Presence of family members.
  - Interactions with family members.
  - Reaction to touch and close personal contact.

- Determine whether language barriers are present:
  - Ask the patient in what language they are most comfortable communicating.
  - Ask about language preferences for written information.
  - Ask whether patient needs an interpreter when discussing health care information and treatments.

- Ask questions to determine individual preferences:
  - What do you do to help you stay healthy?
  - What do you usually do when you are sick or not feeling well?
  - Who do you go to first when seeking help with health problems?
  - Who will help you at home if you need assistance?
  - In coping with this illness/injury, what are your expectations of the health care team and of yourself?

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 51 14/06/2023 10:26

- What do you think will be the most important factor in your recovery?
- Is there anything you would like to tell me that might help us understand your needs?

- Listen carefully to the patient's responses.
- Explain what you are doing and why when performing procedures or asking questions that may be difficult for the individual based on what you have learned.

In addition to being aware of individual differences, understanding human motivation and the need to preserve self-esteem will help you to communicate effectively and provide appropriate care, observing body language, and creating clear messages. Below is a summary guide to treating patients as individuals:

- Develop an understanding of the patient as an individual, including how their condition or illness affects the person, and how the person's circumstances affect their treatment and longer-term health.
- Ensure that factors such as physical or learning disabilities, sight, speech, or hearing problems, and difficulties with reading, understanding, or speaking Arabic are addressed so that the patient is able to participate as fully as possible in consultations and care.
- Ask the patient about any factors, such as their domestic, social, and work situation and their previous experience of health care, that may impact on their health condition and affect their ability or willingness to engage with health care services, manage their own care, and make decisions about self-management and lifestyle choices.
- Listen to and address any health beliefs, concerns, and preferences that the patient has, and be aware that these factors affect how and whether they engage with treatment. Respect their views and offer support to help them engage effectively with health care services and participate in self-management as appropriate.
- Avoid making assumptions about the patient based on their appearance or other personal characteristics.
- If appropriate, discuss with the patient their need for psychological, social, or financial support. Offer support and information to the patient and direct them to sources of support and information. Review their circumstances and need for support regularly.

وزارة التعليم
Ministry of Education
2016 - 1438
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 52 14/06/2023 10:26

checkpoint

1. What does the effectiveness of a health care professional's interactions and communication with patients depend on?
2. What measures will help you to communicate effectively and provide appropriate care?

Today's Research — Tomorrow's Health Care

Memories Restored by Flipping a Switch?

Do you wish that you could always remember the names of people you have met before? Wouldn't it be nice to be able to turn memories on and off with the flip of a switch? You could eliminate all your bad memories and improve your good ones. Someday this may be possible.

A team of biomedical engineers has figured out how to manipulate brain cells in rats so that they can be activated or suppressed. The study involved an area of the brain called the hippocampus, a region crucial for memory formation. The team inserted electrical probes in the hippocampus. They then taught rats to learn which of several levers had to be pressed to receive a reward. During the learning process, the researchers recorded changes in the brain activity of the rats between two major internal divisions of the hippocampus, subregions known as CA3 and CA1. They learned that these subregions interact to convert short-term memory into long-term memory.

The scientists used electrical probes to stimulate the nerves, and found that the rats' performance improved, and the rats could remember the correct lever for a longer period of time. To check whether memory could be suppressed, the researchers gave the rats a drug that blocked the nerve-cell activity, and caused them to forget the task. A team then created an artificial system that duplicated the pattern of interaction in the hippocampus. When this system was inserted into the animals and the brain cells were stimulated with the correct pattern, long-term memory returned.

A final discovery was that when the prosthetic hippocampus with its electrodes was implanted in animals with normal function, the device strengthened the memory being created. The research team has now worked with a team of doctors to implant the hippocampal prosthetic in patients as part of a medical diagnostic procedure for epilepsy. While the electrodes were in place, memory tests were performed, and the team was able to demonstrate up to 37% improvement in memory function. Additional research is now being conducted to customize the implants and test memory codes to see whether memories can be retained over a period of time.

If this research is successful, it might be possible to create a prosthetic that can be permanently implanted in humans. This could help victims of Alzheimer's disease, stroke, or brain injury to recover memory that has been lost and could improve mental function. In addition, if the prosthetic can be used to suppress memories, the device might be a method for treating individuals with post-traumatic stress disorder or other psychiatric conditions, such as fears caused by a previous memory. Even though this research will require many more years of study due to the complex nature of memory in humans, if it is successful, it will be a major breakthrough for many individuals.

Case Study Investigation Conclusion

Rashmi is very nervous about what the lump might mean for her. She will be worrying that she has breast cancer. Were you able to work out a strategy for helping Rashmi? How can you reassure her about the process? Did you consider her daughter's needs as well?

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Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 53 14/06/2023 10:26

CHAPTER 1 SUMMARY

- Health care professionals perform valuable services that make a significant contribution to the community. The work must be taken seriously because it affects the well-being of others.
- The qualities essential for health care professionals to be effective and successful can be applied in the classroom, in the laboratory, and at the clinical site.
- Effective thinking skills and the ability to solve problems are essential traits in a competent health care professional.
- Good communication is essential for the delivery of safe, effective health care. Identifying and overcoming barriers requires the use of empathy, observation, questions, and feedback.
- Treating each patient as an individual is an essential component of good care.

Mini Case 1:1 The Compassionate Nurse

Salem is a recently graduated nurse who has been hired at an oncology clinic in his home town. Salem works with patients who are dealing with a serious disease. This is difficult because he has known many of them and their families for many years. He finds himself wondering how he can best communicate with the patients and their families. Salem wants them to know that he cares and wants to be of assistance, but he is not sure how to approach what he believes to be emotional topics and finds himself keeping conversation to a minimum.

analysis

1. How should Salem treat a patient that he knows personally or whose family he knows about?

2. How can Salem use the steps of the communication process to help him feel more confident about communicating with patients?

3. Which techniques will help him to feel more confident that his patients have understood what he is telling them?

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Ministry of Education
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 54 14/06/2023 10:26

Mini Case 1:2 A Confused Patient

Noor is a nurse assistant working with a local clinic doctor. The doctor tells her that Younis, one of his patients, is having trouble remembering to take his blood pressure medication regularly. He lives with his children and grandchildren, who all have busy lives. The doctor would like Noor to help Younis with strategies to remember his medications.

analysis

1. What might be the problem here, and how should Noor approach it?

2. Should Noor involve Younis's family in solving the problem? How might they be able to help?

3. What should Noor report back to the doctor?

Mini Case 1:3 A Hearing Impaired Patient

Safa is a medical assistant in a local clinic. The next patient, Maha, has a moderate hearing impairment. She is seeing the physician for a routine physical examination. Safa needs to ask Maha about her recent medical history for the doctor and take her blood pressure.

analysis

1. How could Safa initiate communication with Maha?

2. What information does Safa need to gather about Maha?

3. What are the important factors that Safa should consider in preparing her message?

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Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 55 14/06/2023 10:26

REVIEW QUESTIONS

1. What are the six core qualities that every health care professional should demonstrate?

2. Describe four ways in which students can improve study techniques.

3. What are the five steps in the problem-solving process?

4. What is the difference between subjective data and objective data? What are they called when working with patients?

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Ministry of Education
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 56 14/06/2023 10:26

5. What are the six personal factors that should be considered when choosing a health care career?

6. What three factors have increased the need for competent communication in health care?

7. What are the four ways in which messages can be exchanged?

8. What are four factors that should be considered about patients when creating communication goals? Give one example of each.

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Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 57 14/06/2023 10:26

9. What are five environmental factors that affect communication?

10. What are five actions that health care professionals can take to learn about their patients as individuals?

CRITICAL THINKING

1. What does it mean to “think like a health care professional”? Why is this attitude important?

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Ministry of Education
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 58 14/06/2023 10:26

2. Why is effective communication important in health care delivery?

3. Think about how you communicate with your peers, your teachers, and your family. What communication techniques do you use? Are they effective? How can you improve your effectiveness?

ACTIVITIES

1. Create a personal plan for developing the core qualities demonstrated by health care professionals.
2. Make a poster that illustrates the six steps in the communication process.

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2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 59 14/06/2023 10:26

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CHAPTER

2 GERIATRIC CARE

Case Study Investigation

Reem is living with and taking care of her 87-year-old grandmother Maryam while she is in nursing school. Her grandmother has lost her hearing; her eyesight is dimming, and she is losing weight, strength, and endurance. Maryam loves to be with people, but her husband and many of her friends have passed away. She has become forgetful and no longer goes out; she misses meeting her friends. At the end of the chapter, you will be asked to list the ways in which Maryam is experiencing the physical and emotional changes associated with aging.

LEARNING OBJECTIVES

After completing this chapter, you should be able to:

- Differentiate between the myths and facts of different aspects of aging.
- Identify at least two physical changes in aging in each body system.
- Demonstrate methods of providing care to the elderly individual who is experiencing physical changes of aging.
- List five factors that cause psychosocial changes in aging.
- Describe at least six methods to assist an elderly individual in adjusting to psychosocial changes.
- Describe the causes and effects of confusion and disorientation in the elderly.
- Create a reality orientation program.

KEY TERMS

Alzheimer's disease
arteriosclerosis
arthritis
atherosclerosis
autonomy
bronchitis
cataracts
cerebrovascular accident
delirium
dementia
dysphagia
dyspnea
emphysema
glaucoma
incontinence
nocturia
osteoporosis
reality orientation
senile lentigines
thrombus
transient ischemic attacks (TIAs)

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GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 60 14/06/2023 10:26

INTRODUCTION

A survey from the Saudi General Authority for Statistics carried out in 2025 (the Saudi Elderly Survey) found that there were approximately 1.7 million people aged 60+ years living in Saudi Arabia, making up 4.8% of the total population. Today, most individuals can expect to live into their 70s, and many individuals enjoy healthy and happy lives in their later years (**Figure 2–1A**). However, older people often develop chronic conditions (**Figure 2–1B**). The over-60 age group uses health care services frequently, so it is essential for a health care provider to understand the special needs of the elderly population.

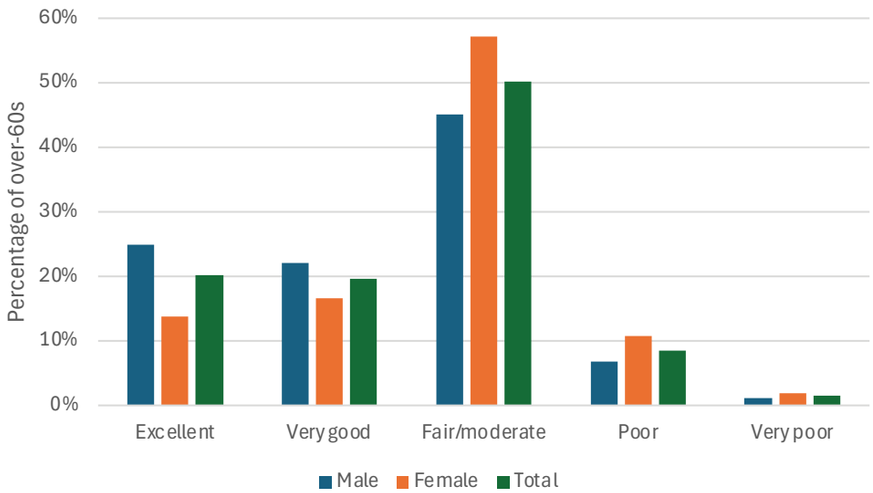

FIGURE 2–1A Percentage of people over 65 years of age in Saudi Arabia identified in the 2025 Saudi Elderly Survey.

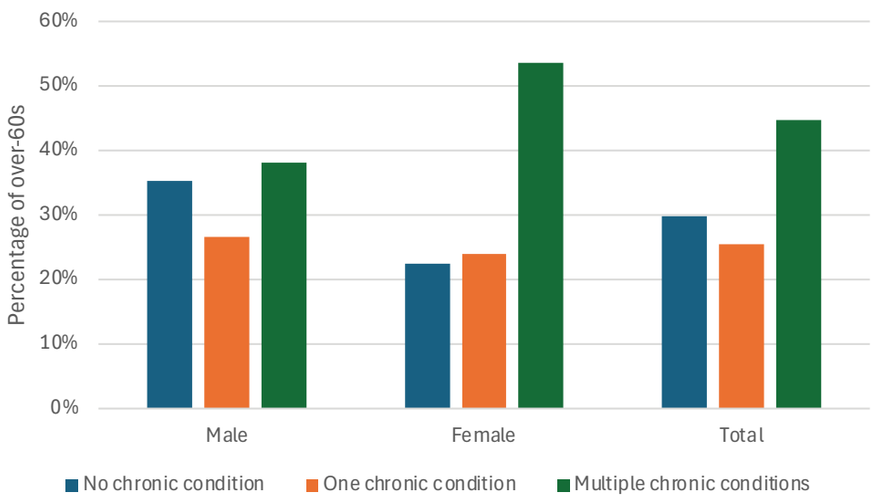

FIGURE 2–1B Difference in percentages of men and women aged 65 years and over identified in the 2025 Saudi Elderly Survey.

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2026 - 1448

2:1 MYTHS ABOUT AGING

Aging is a normal process and leads to normal changes in body structure and function. Even though few people want to grow old, it is a natural event in everyone's life. *Gerontology* is the scientific study of aging and the problems of the old. *Geriatric care* is care provided to older individuals. Through the study of the aging process and the elderly, many facts on aging have been established. However, many myths, or false beliefs, still exist regarding aging and elderly individuals. It is essential for the health care provider to be able to distinguish fact from myth when providing geriatric care.

- **Myth**: Anyone over a certain set age, such as 60, is "old."
- **Fact**: Old is determined less by the number of years lived and more by how an individual thinks, feels, and behaves. For example, to a 10-year-old, a 35-year-old is old. It is important to remember that many individuals are active, productive, and self-sufficient into their 80s and even 90s. Too often, the term *old* becomes synonymous with *worthless* or *worn-out*. Better terms would be *experienced* or *mature*.
- **Myth:** Elderly people are incompetent and incapable of making decisions or handling their own affairs.
- **Fact:** Older individuals may make better decisions and judgments because they frequently base their decisions on many years of experience and knowledge. In addition, studies have proved that older people are able to concentrate, learn new skills, and evaluate new information.
- **Myth:** All elderly people lose their memory.
- **Fact:** It is not inevitable that you will lose memory function as you age. In the 2025 Saudi Elderly Survey, only 1.4% of people over 60 had Alzheimer's disease. There are many things that you can do to train your brain and maintain your memory, such as solving crosswords or complex puzzles. Even though some older people do experience confusion and disorientation, the majority of elderly individuals remain mentally competent until they die.
- **Myth:** Being old means being sick or disabled.
- **Fact:** Because of healthier lifestyles, better nutrition, regular exercise, preventive health care, new medications, and technological advances, most elderly individuals are in general good health. Having good access to health care, stress reduction, and maintaining a proper body weight are additional factors that can help to slow the aging process. Advancements in diagnosing and treating heart disease, hypertension, diabetes, and similar chronic conditions have also improved the general health of the elderly. Today, many individuals in their 80s and 90s have no major disabilities or illnesses, and have a good quality of life.

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Ministry of Education
2026 - 1448

- **Myth:** Elderly individuals do not want to work—that is, the goal of the elderly is to retire and, prior to retirement, they lose interest in work.
- **Fact:** Many individuals remain productive into their 70s and even 80s (**Figure 2–2**). In Saudi Arabia, some individuals continue to work and engage in community activities after the age of 60, reflecting their continued contributions and active role in society. Studies have shown that the older employee has good attendance, performs efficiently, and readily learns new skills. Employers, desiring good work ethics and experience, frequently recruit and hire older employees. Many retired individuals do not want a full-time job, but they return to part-time positions or serve as consultants or volunteers.
- **Myth:** Retired people have nothing to do with their lives.
- **Fact:** Many retired people enjoy full and active lives. They engage in travel, hobbies, sports, social activities, family events, and community activities. The 2025 Saudi Elderly Survey found that many older people undertake voluntary work in religious, social, cultural, and other areas of life.

checkpoint

1. What is gerontology?
2. Why are more elderly individuals in general good health?

FIGURE 2–2 Many individuals remain productive into their 70s and even 80s.

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Ministry of Education
2026 - 1448

2:2 PHYSICAL CHANGES IN AGING

As aging occurs, certain physical changes occur in all individuals. These changes are a normal part of the aging process. It is important to note that most of the changes are gradual and take place over a long period. In addition, the rate and degree of change varies among individuals. Physical structures and functions are affected by disease and can increase the speed and degree of the changes. Lifestyle, nutrition, social environment, and limited access to medical care can also have effects.

Most physical changes in aging involve a decrease in the function of body systems. Body processes slow down. There is a corresponding decrease in energy level. If an individual can recognize these changes as a normal part of aging, the individual can usually learn to adapt to and cope with the changes.

INTEGUMENTARY SYSTEM

Some of the most obvious effects of aging are seen in the integumentary system (the outermost layer of the body—skin, hair, nails, and glands) (**Figure 2–3**):

- Production of new skin cells decreases with age.
- The sebaceous (oil) and sudoriferous (sweat) glands become less active.

FIGURE 2–3 Some of the most obvious effects of aging are seen on the skin.

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Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 64 14/06/2023 10:26

- Circulation to the skin decreases and causes coldness, dryness, and poor healing of injured tissue.
- The hair loses color, and hair loss occurs.

Decreases in body function lead to physical or structural changes:

- The skin becomes dry, less elastic, and fragile, making it prone to skin tears and injury.
- Itching is common.
- Dark yellow or brown colored spots, called **senile lentigines**, appear.
- When the structure of the fatty tissue layer of the skin diminishes, lines and wrinkles develop.
- The nails become thick, tough, and brittle.
- A decrease in fatty tissue and poor circulation causes the older adult to frequently feel cold. Hypothermia, a below-normal body temperature, can be a serious problem for the elderly.

Good skin, nail, and hair care are essential:

- Mild soaps should be used as many soaps cause dryness. Bath oils or moisturizing lotions are recommended to combat dryness and itching.
- Daily baths can also contribute to dry, itchy skin; baths or showers two or three times a week with partial baths on other days are recommended.
- Brushing the hair helps stimulate circulation and production of oil.
- Any sores or injuries to the skin should be cared for immediately. It is important to keep injured areas clean and free from infection.
- When elderly people notice sores or injuries that do not heal, they should get medical help.
- Frequently, the elderly person requires a room temperature that is higher than normal and free from drafts.

Proper diet, exercise, good hygiene, decreased sun exposure, use of sunscreen while outdoors, and careful skin care can help to slow and even decrease the normal physical changes in the integumentary system.

MUSCULOSKELETAL SYSTEM

As aging occurs, muscle structures lose tone, volume, and strength. Examples of degenerative diseases in aging include:

- **Osteoporosis**, a condition in which calcium and other minerals are lost from the bones, causes the bones to become brittle and more likely to fracture or break.

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Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 65 14/06/2023 10:26

- **Arthritis**, an inflammation of the joints, causes the joints to become stiff, less flexible, and painful. The ribcage becomes more rigid, and the bones in the vertebral column press closer together (compress).

These physical and structural changes cause the elderly individual to experience a gradual loss in height, decreased muscular function and mobility, and weakness. Movement is slower, and the sense of balance is less sure. Falls occur easily and often result in fractures of the hips, arms, or legs. Fine finger movements, such as those required when buttoning clothes or tying shoes, are often difficult for the elderly individual.

- Elderly individuals should be encouraged to exercise as much as their physical conditions permit (**Figure 2–4**). This helps to keep muscles active and joints as flexible as possible. Even slow, daily walks help to maintain muscle tone. Range-of-motion exercises can also maintain muscle strength.
- A diet rich in protein, calcium, and vitamins can slow the loss of minerals from the bones and maintain muscle structure.
- Medications, together with a daily intake of calcium and vitamin D, can slow the progress of osteoporosis.
- Extra attention must be paid to the environment so it is safer for the elderly person. Grab bars in the bathroom, handrails in halls and on stairs, and other similar devices aid in ambulation.
- When the sense of balance is poor, an elderly person may need support during ambulation. The use of walkers and quad canes is frequently recommended. In addition, well-fitting shoes with nonslip soles and flat heels can help prevent falls. Self-stick strips and bands can replace buttons and shoestrings to make dressing easier.

FIGURE 2–4 Elderly individuals should be encouraged to exercise as much as their physical conditions permit.

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Ministry of Education
2016 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 66 14/06/2023 10:26

- A consultation with a physician, physical therapist, or occupational therapist can provide an elderly individual with information on the latest and most effective adaptive devices to maintain independence.

CIRCULATORY SYSTEM

In the circulatory system, the heart muscle becomes less efficient at pushing blood into the arteries, and cardiac output decreases with aging. Structurally, the blood vessels narrow and become less elastic. Blood flow to the brain and other vital organs may decrease. Blood pressure may increase or decrease.

Many elderly individuals do not notice any changes while at rest. They are more aware of functional changes when exercise, stress, excitement, illness, and other similar events call for increases in the body's need for oxygen and nutrients. During these periods, they experience weakness, dizziness, numbness in the hands and feet, and a rapid heart rate.

Elderly individuals who experience circulatory structural and functional changes should avoid strenuous exercise or overexertion. They need periods of rest during the day. Moderate exercise, according to the individual's ability to tolerate it, stimulates circulation and helps to prevent the formation of a **thrombus**, or blood clot.

Support stockings, antiembolism hose, and not using garters or tight bands around the legs also help prevent blood clots. If an individual is confined to a bed or wheelchair, range-of-motion exercises help circulation. If high blood pressure is present, a diet low in salt or sodium and, in some cases, fat may be recommended. Individuals with circulatory system disease should follow the diet and exercise plans recommended by their doctors.

RESPIRATORY SYSTEM

Respiratory muscles become weaker with age. The ribcage becomes more rigid. The alveoli (air sacs in the lungs) become thinner and less elastic, which decreases the exchange of gases between the lungs and bloodstream. The bronchioles (air tubes in the lungs) also lose elasticity. Structural changes in the larynx lead to a higher-pitched and weaker voice. Chronic conditions such as **emphysema**, in which the alveoli lose their elasticity, or **bronchitis**, in which the bronchioles become inflamed, decrease the efficiency and function of the respiratory system even more severely.

- These structural changes frequently cause the elderly individual to experience **dyspnea**, or difficult breathing. Breathing becomes more rapid, and they have difficulty coughing up secretions from the lungs. This makes them more susceptible to respiratory infections such as colds and pneumonia.
- Learning to alternate activity with periods of rest is important to avoid dyspnea.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 67 14/06/2023 10:26

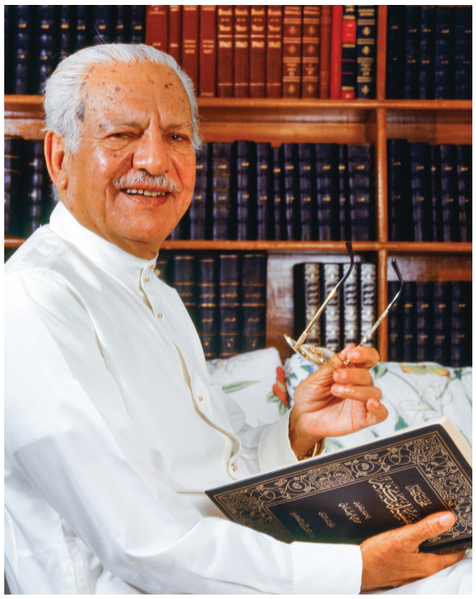

FIGURE 2–5 Individuals who remain mentally active usually show fewer mental changes.

FIGURE 2–6 Large numbers on a cell phone can help improve vision.

- Proper body alignment can also ease breathing difficulties.
- The elderly individual with respiratory problems may sleep with two or three pillows elevating the upper body to make breathing easier.
- Avoiding polluted air, such as that in smoke-filled rooms, is essential.
- Breathing deeply and coughing at frequent intervals helps clear the lung passages and increase lung capacity.
- Elderly individuals with chronic respiratory functional issues often use oxygen on a continuous basis. Portable oxygen units allow many individuals to continue to lead active lives.

NERVOUS SYSTEM

Physical changes to the structures in the nervous system affect many body functions. Blood flow to the brain decreases, and there is a progressive loss of brain cells. This loss of structural functioning interferes with thinking, reacting, interpreting, and remembering. The senses of taste, smell, vision, and hearing diminish. Nerve endings are less sensitive, and there is a decreased ability to respond to pain and other stimuli.

- As these structural and functional changes occur, the elderly individual may experience **memory loss**. Short-term memory is usually affected. For example, an individual may not remember what they ate for breakfast but does remember the entire menu from their retirement party. Long-term memory and intelligence do not always decrease. It may take elderly individuals longer to react, but given enough time, they can think and react appropriately. Individuals who remain mentally active and involved in current events usually show fewer mental changes (**Figure 2–5**). Studies have shown that most elderly adults remain mentally competent throughout their lifespans.
- **Changes in vision** cause problems in reading small print or seeing objects at a distance. There is a decrease in peripheral (side) vision and night vision. The eyes take longer to adjust from light to dark, and there is an increased sensitivity to glare. Elderly individuals are

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 68 14/06/2023 10:26

also more prone to the development of **cataracts**, where the normally transparent lens of the eye becomes cloudy or opaque. **Glaucoma**, a condition in which the intraocular pressure of the eye increases and interferes with vision, is also more common in the elderly. Proper eye care, prescription glasses/lenses, medical treatment of cataract or glaucoma, larger numbers on a cell phone, and proper lighting can all improve vision (**Figure 2–6**).

- **Hearing loss** usually occurs gradually in the elderly. The individual may speak more loudly than usual, ask for words to be repeated, and not hear high-frequency sounds such as the ringing of a telephone. Problems may be more apparent when there is a lot of background noise. For example, an elderly person may not hear well in a crowded restaurant where music is playing and many other people are talking. A hearing aid can help resolve some hearing problems. However, in cases of severe structural nerve damage, a hearing aid will not eliminate the problem. In addition, many individuals resist using hearing aids. If a person wears a hearing aid, it is important to keep the aid in good working condition by changing batteries, keeping the aid clean, and checking to make sure the individual is wearing it correctly. When a person has a hearing impairment, it is important to talk slowly and clearly. Avoid speaking excessively loudly. Facing individuals while talking to them also helps in many situations. Eliminating background noise, such as that produced by a radio or television, also increases the ability to hear.
- A **decrease in the senses of taste and smell** frequently affects the appetite. Elderly individuals often complain that food is tasteless and add sugar, salt, or pepper. Attractive foods with a variety of textures and tastes may help stimulate the appetite. The decrease in the sense of smell may also make the elderly individual less sensitive to the smell of gas, chemicals, smoke, and other dangerous odors. A smoke detector, chemical detectors, and careful monitoring of the environment can help eliminate this danger.
- **Decreased sensation of pain** and other stimuli can lead to injuries. The elderly are more susceptible to burns, frostbite, cuts, fractures, muscle strain, and many other injuries. At times, elderly people are not even aware of injury or disease because they do not sense pain. It is important for elderly individuals to handle hot or cold items with extreme care, and to be aware of dangers in the environment.

Changes in the structure and function of the nervous system usually occur gradually over a long period of time. This allows an individual time to adapt to the changes and learn to accommodate them. However, it is sometimes necessary for someone else to assist when the changes become severe. For example, many elderly individuals continue to drive cars. Because of slower reaction times, however, these individuals may be more prone to having automobile accidents. When an elderly person shows impaired driving ability, it often becomes necessary for a family member or the law to prevent the individual from driving.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 69 14/06/2023 10:26

DIGESTIVE SYSTEM

Physical changes in the digestive system occur when fewer digestive juices and enzymes are produced, the function of muscle action becomes slower and peristalsis decreases, teeth are lost, and liver function decreases.

- **Dysphagia**, or difficult swallowing, is a frequent complaint of the elderly. Less saliva and a slower gag reflex contribute to this problem. In addition, the structural loss of teeth or use of poor-fitting dentures makes it more difficult to chew food properly.
- Another common complaint is **indigestion**, which results from slower digestion of foods caused by decreased digestive juices.
- **Flatulence** (gas) and **constipation** are common because of decreased peristalsis and poor diet. The decreased sensation of taste also contributes to a poor appetite and diet.

Good oral hygiene, repair or replacement of damaged teeth, and a relaxed eating atmosphere can contribute to better chewing and digestion of food. Most elderly people find it is best to avoid dry, fried, and fatty foods because such foods are difficult to chew and digest. High-fiber and high-protein foods with different tastes and textures are recommended. Careful use of seasonings and herbs to improve taste also increases appetite. It is important to avoid excessive seasonings because they can cause indigestion. Because metabolism slows, fewer calories are needed to maintain body weight. Careful monitoring of weight is important to prevent obesity. Increasing fluid intake makes swallowing easier, helps prevent constipation, and aids kidney function.

URINARY SYSTEM

With aging, the kidneys become smaller and less efficient at producing urine. Poor circulation to the kidneys and a decrease in the number of nephrons result in a functional loss of ability to concentrate the urine, which causes a loss of electrolytes and fluids. The ability of the bladder to hold urine decreases. Sometimes the bladder does not empty completely and urine is retained in the bladder—a major cause of bladder infections.

The elderly person may find it necessary to urinate more frequently.

- **Nocturia**, or urination at night, is common and disrupts the sleep pattern. Also, retention of urine in the bladder causes bladder infections. Men frequently experience enlargement of the prostate gland, which makes urination difficult and causes urinary retention.
- Loss of muscle tone results in **incontinence**, or the inability to control urination. Incontinence may also result from treatment for prostatic hypertrophy (enlargement of the prostate gland), or from treatment for prostate cancer.

وزارة التعليم
Ministry of Education
2016 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 70 14/06/2023 10:26

Many elderly individuals decrease fluid intake to cut down on the frequent need to urinate. This can cause dehydration, constipation, kidney disease, and infection. Elderly individuals should be encouraged to increase fluid intake to improve kidney function. To decrease incidents of nocturia, most fluids should be taken before evening. Regular trips to the bathroom, wearing clothing that is easy to remove, and using absorbent pads as needed can help the individual who has mild incontinence. Bladder training programs can also help increase bladder capacity and lead to more control over urination in incontinent persons. An indwelling catheter may be needed if all urinary control is lost.

When structural changes in the urinary system cause poor functioning of the kidneys, waste substances can build up in the bloodstream and can cause serious illness. It is thus important to keep the kidneys functioning as efficiently as possible.

ENDOCRINE SYSTEM

Changes in the endocrine system result in increased production of some hormones, such as parathormone and thyroid-stimulating hormone, and decreased production of other hormones, such as thyroxin, estrogen, progesterone, and insulin. Because hormones affect many body functions, several physical changes may occur. The immune system of the body functions less effectively, and elderly individuals are more prone to disease. The basal metabolic rate decreases, resulting in complaints of feeling cold, tired, and less alert (**Figure 2–7**). Intolerance to glucose can develop, resulting in increased blood glucose levels.

FIGURE 2–7 A lap blanket can help when a patient complains of feeling cold.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 71 14/06/2023 10:26

As with the other body systems, changes in the endocrine system occur slowly over a long period of time. Many elderly individuals are not as aware of changes in this system. Proper exercise, adequate rest, medical care for illness, a balanced diet, and a healthy lifestyle all help decrease the effects caused by changes in hormone activity.

REPRODUCTIVE SYSTEM

The decrease of the female hormones estrogen and progesterone cause physical changes in a woman's body. In some cases, a weakness in its supporting tissues causes the uterus to sag downward, a condition known as *prolapse*. Decreasing levels of the male hormone testosterone also produce changes in the male body.

SUMMARY

Aging causes many physical, structural, and functional changes in all body systems. The rate and degree of the changes vary in different individuals, but all elderly individuals experience some degree of change. Providing means of adapting to and coping with changes allows elderly people to enjoy life even with physical limitations. It is important for all health care providers to learn to recognize changes and provide methods for dealing with them. Tolerance, patience, and empathy are essential.

checkpoint

1. Give two specific examples of how the nervous system's functions are affected because of structural changes affecting blood flow to the brain.
2. Why might elderly people be more prone to developing disease?

2:3 PSYCHOSOCIAL CHANGES IN AGING

In addition to physical changes, elderly individuals also experience psychological and social changes. Some individuals cope with these changes effectively, but others experience extreme frustration and mental distress. It is important for the health care provider to be aware of the psychosocial changes and stresses experienced by the elderly.

وزارة التعليم
Ministry of Education
2016 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 72 14/06/2023 10:26

WORK AND RETIREMENT

Most adults spend a large portion of their days working. Many associate their feelings of self-worth with the jobs they perform. They are proud to state that they are nurses, electricians, teachers, lawyers, or administrative assistants. In addition, social contact while working is a major form of interaction with others.

Retirement is often viewed as an end to the working years. Many individuals are able to enjoy retirement and find other activities to replace job roles. Some individuals find part-time or consultant-type jobs after retirement from their primary jobs. Other individuals become active in volunteer work or take part in community or club activities. These individuals find satisfactory replacements for the feelings of self-worth once provided by their jobs.

However, some elderly individuals feel a major sense of loss upon retirement. They may experience stress, and they can become depressed.

SOCIAL RELATIONSHIPS

Social relationships change throughout life. Among the elderly, these changes may occur more frequently. Often, children marry and move away. If a spouse dies, the "couple" image is replaced by one of "widow" or "widower." As a person ages, more friends and relatives die, and social contacts decrease.

Some elderly individuals are able to adjust to these changes by making new friends and establishing new social contacts. Mosques and community groups provide many social activities for the elderly. By taking part in these activities, individuals who made friends readily throughout their lives can continue to do so as they grow older. The 2025 Saudi Elderley Survey found that 63% of men and 57% of women over 60 actively participated in social activities. Only 11% of elderly individuals had no social contact.

Some elderly individuals find it difficult to cope with the continuous loss of friends and relatives. The death of a spouse is frequently devastating to an elderly individual, especially when a couple has had a close relationship for many years. Psychological help is essential in these cases.

LIVING ENVIRONMENTS

Changes in living environments create psychosocial changes. Most elderly individuals prefer to remain in their own homes. They feel secure surrounded by familiar environments. The loss of **autonomy** (self-governance or the ability to decide for oneself by making choices and pursuing a course of action) can be frustrating and upsetting. If the elderly person feels secure, coping becomes much easier (**Figure 2–8**).

وزارة التعليم
Ministry of Education
2026 - 1448

INDEPENDENCE

Most individuals want to be independent and self-sufficient. Even 2-year-olds begin to learn autonomy as they assert their right to choose and strive to be independent. Just as children learn that there are limits to independence, the elderly learn that independence can be threatened with age. Physical disability, illness, decreased mental ability, and other factors can all lead to a loss of independence in the elderly.

Individuals who once were autonomous and took care of themselves find it necessary to ask others for assistance. After driving for a lifetime, elderly individuals might find that they can no longer drive safely. They may have stopped driving or no longer have personal transportation. They have to depend on others to take them where they need to go. In addition, physical limitations prevent them from cooking meals, washing, cleaning, and, in some cases, even taking care of themselves. Frustration, anger, and depression can develop.

Any care provided to elderly individuals should allow as much independence and autonomy as possible. Assistance should be provided as needed for the individual's safety, but the individual should be encouraged to do as much as possible. For example, a health care team member should encourage elderly persons to choose their clothing and dress themselves, even if this takes longer. Self-stick strips can replace buttons to make the task of dressing easier and to provide more independence. This helps the elderly individual to retain a feeling of autonomy, adapt to the situation, and maintain a sense of self-worth. At all times, elderly individuals should be allowed as much choice as possible to help them maintain their individuality.

FIGURE 2–8 If the elderly person feels secure, coping becomes much easier.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 74 14/06/2023 10:27

DISEASE AND DISABILITY

Elderly people are more prone to disease and disability. Disease is usually defined as any condition that interferes with the normal function of the body. Common examples in the elderly include diabetes, heart disease, chronic obstructive pulmonary disease, arthritis, and osteoporosis. A disability is defined as a physical or mental defect or handicap that interferes with normal functions. Hearing impairments, visual defects, or the inability to walk caused by a fractured hip are examples. Diseases sometimes cause permanent disabilities. For example, a **cerebrovascular accident** (a stroke) can result in permanent paralysis of one side of the body, or hemiplegia.

When disease or disability affects the functioning of the body, an individual may experience psychological problems. When this occurs in an elderly individual already stressed by other changes or circumstances, it can be traumatic. A fractured hip can cause an elderly individual who had been living independently to need to rely more than they want on their family. Disease or disability frequently occurs suddenly and does not allow for gradual adjustment, causing coping to be much more difficult.

Sick people often have fears of death, chronic illness, loss of function, and pain. These are normal fears, and these individuals need time to adjust to their situations. Listen to them as they express these fears, and be patient and understanding. If they cannot discuss their feelings, accept this reticence and provide supportive care (**Figure 2–9**).

SUMMARY

Psychosocial changes can be major sources of stress in the elderly. As changes occur, the individual must learn to accommodate the changes and function in new situations. It is important to remember that older adults have survived many crises in their lives and have learned many different coping methods. These individuals must be encouraged to use their existing strengths and coping skills. With support, understanding, and patience, the health care provider can assist elderly individuals as they learn to adapt.

checkpoint

1. How might elderly individuals adjust to changes to social relationships?
2. In what way can elderly people retain their autonomy?

وزارة التعليم
Ministry of Education
2026 - 1448

GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 75 14/06/2023 10:27

FIGURE 2–9 Provide supportive care and listen to sick individuals as they express their fears.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 76 14/06/2023 10:27

2:4 CONFUSION AND DISORIENTATION IN THE ELDERLY

Although most elderly individuals remain mentally alert until death, some experience periods of confusion and disorientation. Signs of confusion or disorientation include talking incoherently, not knowing their own names, not recognizing others, wandering aimlessly, lacking awareness of time or place, displaying hostile or combative behavior (**Figure 2–10**), hallucinating, regressing in behavior, paying less attention to personal hygiene, and being unable to respond to simple commands.

CAUSES OF CONFUSION AND DISORIENTATION

Delirium is the term used when confusion or disorientation is a temporary condition caused by a treatable condition. Some possible causes include:

- Stress or depression caused by physical or psychosocial changes.
- Kidney disease, which interferes with electrolyte balance; respiratory disease, which decreases oxygen; and liver disease, which interferes with metabolism.
- Elderly individuals are more sensitive to medications, and drugs can accumulate in the body and cause confusion and disorientation.
- Poor nutrition or lack of fluid intake can interfere with mental ability.

FIGURE 2–10 Hostile or combative behavior often signals feelings of frustration or confusion.

وزارة التعليم
Ministry of Education
2026 - 1448

GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 77 14/06/2023 10:27

Frequently, identification and treatment of any of these conditions decreases and even eliminates the confusion and disorientation. For example, changing a medication or giving it in smaller doses may restore normal function.

Disease or damage to the brain can sometimes result in chronic confusion or disorientation:

- A cerebrovascular accident, or stroke, which damages brain cells, is one possible cause.
- A blood clot can obstruct blood flow to the brain, or a vessel can rupture and cause hemorrhaging in the brain.
- **Arteriosclerosis**, a condition in which the walls of blood vessels become thick and lose their elasticity, is common in elderly individuals. If the vessels become narrow because of deposits of fat and minerals, such as calcium, the condition is called **atherosclerosis**. These conditions can cause **transient ischemic attacks (TIAs)**, or ministrokes, which result in temporary periods of diminished blood flow to the brain. Each time an attack occurs, more damage to brain cells results.
- **Dementia** is a loss of mental ability characterized by a decrease in intellectual ability, loss of memory, impaired judgment, personality change, and disorientation. When the symptoms are caused by high fever, kidney infection, dehydration, hypoxia (lack of oxygen), drug toxicity, or other treatable conditions, the condition is called delirium or, in some cases, acute dementia. When the symptoms are caused by permanent, irreversible damage to brain cells, the condition is called chronic dementia. Cerebrovascular accidents, arteriosclerosis, and TIAs can be contributing causes to chronic dementia. One theory suggests that chronic dementia is caused by a complete lack or an inadequate amount of an enzyme. Whatever the cause, chronic dementia is usually regarded as a progressive, irreversible disease.
- Science **Alzheimer's disease** is a form of dementia that causes progressive changes in brain cells. Individuals with Alzheimer's disease lack a neurotransmitter, or chemical, that allows messages to pass between nerve cells in the brain. This results in the death of neurons and the development of tangles. Alzheimer's disease can occur in individuals as young as 40 years of age but frequently occurs in those in their 60s and 70s. The cause is unknown, but there are many theories currently being researched. A genetic defect, a missing enzyme, toxic effects of aluminum, a virus, and the faulty metabolism of glucose have all been implicated as possible causes. Whatever the cause, Alzheimer's disease is viewed as a terminal, incurable brain disease usually lasting from three to ten years.

وزارة التعليم
Ministry of Education
2016 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 78 14/06/2023 10:27

FIGURE 2–11 A patient with Alzheimer's disease may forget how common objects are used and have problems with many activities of daily living.

- In the early stages, the individual exhibits self-centeredness, a decreased interest in social activities, memory loss, mood and personality changes, anxiety, agitation, depression, poor judgment, confusion regarding time and place, and an inability to plan and follow through with many activities of daily living (**Figure 2–11**).
- As the disease progresses, night-time restlessness occurs, mood swings become frequent, personal hygiene is ignored, confusion and forgetfulness become severe, perseveration or repetitious behavior occurs, the ability to understand others and speak coherently decreases, weight begins to fluctuate, paranoia and hallucinations increase, and full-time supervision becomes necessary.
- In the terminal stages, the individual experiences total disorientation regarding person, time, and place; becomes incoherent and is unable to communicate with words; loses control of bladder and bowel functions; develops seizures; loses weight despite eating a balanced diet; becomes totally dependent; and finally, lapses into a coma and dies. Death is frequently caused by pneumonia, infections, complications from falls, and kidney failure. Progress through the various stages of this disease varies among individuals.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 79 14/06/2023 10:27

Diagnosing Alzheimer's disease is difficult and can only be confirmed when amyloid plaques are found during an autopsy after death. Testing for Alzheimer's disease is based on individual situations.

- Usually, a **brain scan** (computed tomography or magnetic resonance imaging) is done to rule out other conditions that may mimic the symptoms—such as a neoplasm, hematoma, or cerebrovascular disease.
- **Blood tests** may also be done to determine if a chemical or hormonal imbalance or vitamin deficiency is causing the behavior.
- **Clinical assessment** using diagnostic mental testing that evaluates how questions are answered and tasks are performed provides diagnostic accuracy in many cases.

Although there is no cure for Alzheimer's disease, several different medications have shown promise in improving memory and thinking skills in the earlier stages of the disease. Other drugs that act to increase blood flow to the brain and clear away the amyloid plaques are currently being tested. In addition, medications that treat common symptoms of Alzheimer's disease, such as depression or anxiety, may be prescribed. Early diagnosis and intervention is essential.

CARING FOR CONFUSED OR DISORIENTED INDIVIDUALS

Safety

Whatever the cause of confusion or disorientation, certain courses of care should be followed. A primary concern is to provide a safe and secure environment. Dangerous objects such as drugs, poisons, scissors, knives, razors, power tools, cleaning solutions, matches, and lighters should be kept out of reach and in a locked area. If the individual tends to wander, doors and windows should be secure. In severe cases, special sensors may be attached to the leg or wrist of the disoriented individual (**Figure 2–12**). The sensors alert others if the individual starts to leave a specific area. Many of the sensors also have GPS tracking abilities.

FIGURE 2–12 Special sensors may be attached to the leg or wrist of a disoriented individual.

وزارة التعليم
Ministry of Education
2016 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 80 14/06/2023 10:27

FIGURE 2–13 Activities for a confused or disoriented individual should be kept simple and last for short periods of time.

FIGURE 2–14 A large clock can help an elderly individual keep track of time and daily activities.

Following the same routine is also important. Meals, baths, dressing, walks, and bedtime should each occur at approximately the same time each day. Any change in routine can cause stress and confusion. Even though the individual should be encouraged to be as active as possible, activities should be kept simple and last for short periods of time (**Figure 2–13**). A calm, quiet environment is also important. Loud noises, crowded rooms, and excessive commotion can cause the individual to become agitated and even more disoriented.

Reality orientation consists of activities that help promote awareness of person, time, and place. The activities can be followed by anyone caring for the confused individual, whether the care is in the home or in a long-term care facility. Some aspects of reality orientation are the following:

- Be calm and gentle when approaching the individual.
- Address the person by the name they prefer.
- State your name and correct the person if they call you a wrong name. For example, if a patient thinks you are their daughter, say, "I am not your daughter, Fatima. I am Sara, your nurse for today."
- Make constant references to day, time, and place: "It is 8 o'clock on Tuesday morning and time for breakfast."
- Use clocks, calendars, and information boards to point out time, day, and activities (**Figure 2–14**).
- Maintain a constant, limited routine.
- Keep the individual oriented to day–night cycles. During the day, encourage the person to wear regular clothes. Also, open the curtains and point out the sunshine. At night, close the curtains, use night lights if necessary, and promote quiet and rest.
- Speak slowly and clearly, and ask simple questions.
- Never rush or hurry the individual.

وزارة التعليم
Ministry of Education
2026 - 1448

FIGURE 2–15 Use appropriate touch to communicate with a disoriented individual, unless this causes agitation.

- Repeat instructions patiently. Allow time for the individual to respond.
- Encourage conversations about familiar things.
- Allow the individual to reminisce or remember past experiences.
- Encourage the use of a television or radio, but avoid overstimulating the individual.
- Make sure the individual uses sensory aids such as glasses and hearing aids (if needed), and that the devices are in good working order.
- Keep familiar objects and pictures within view. Avoid moving the person's furniture or belongings.
- Do not argue with incorrect statements. Gently provide correct information if the person is able to accept the information without agitation. For example, when a person states it is time to dress for work, say, "You don't have to go to work today. You retired seven years ago."
- Use appropriate touch to communicate with the person, unless this causes agitation (**Figure 2–15**).
- Avoid arguments or recriminations. When you find an elderly resident in the wrong area, do not say, "You know you are not supposed to be here." Instead, say, "Let me show you how to get to your room."
- Encourage independence and self-help.
- Always treat the person with respect and dignity.

Reality orientation is usually effective during the early stages of confusion or disorientation. In later stages, when the individual is not able to respond, it can cause increased anxiety and agitation. When patient assessment shows that this is occurring, avoid confronting the patient with reality. For example, do not tell a patient who wants to see her husband that her husband died ten years ago. Instead, ask her to tell you about her husband and allow her to reminisce. Provide supportive care to allow the patient to maintain dignity and express feelings.

Caring for a confused or disoriented individual can be frustrating at times. Continual assessment of the individual's abilities and problems is needed to design a health care program that will allow the individual to function within the level of their ability. Patience, consistency, and sincere caring are essential on the part of the health care provider.

وزارة التعليم
Ministry of Education
2026 - 1448

checkpoint

1. What is Alzheimer's disease?
2. List five methods of reality orientation used when caring for confused patients.

2:5 MEETING THE NEEDS OF THE ELDERLY

Providing care to the elderly can be a challenging but rewarding experience. It is important to remember that the needs of the elderly do not differ greatly from the needs of any other individual. They have the same physical and psychological needs as any person at any age. However, these needs are sometimes intensified by physical or psychosocial changes that disrupt the normal life pattern. When this occurs, the elderly individual needs understanding, acceptance, and the knowledge that someone cares. Islamic law (Sharia) and the specific values, customs, and traditions of Saudi society call for reverence and respect for the elderly. Supporting the elderly and raising awareness of their rights is important in caring for them.

The United Nations General Assembly sets out principles relating to the elderly, which were adopted in 1991:

- **Independence:** Older people should always have adequate food, water, shelter, clothing, health care, the possibility of gainful employment, education, and training.
- **Participation:** The older generation should contribute to making policies that directly affect their well-being.
- **Care:** Opportunities for family and health care should be available for the elderly, in their own homes, or in a care or treatment facility.
- **Self-realization:** Older people should have opportunities to develop through access to the educational, cultural, religious, and recreational resources of society in general (**Figure 2–16**).
- **Dignity:** Older people should be enabled to live in conditions of dignity and security, without being subject to any exploitation or abuse, physical or mental, and be treated fairly regardless of their age, gender, racial, or ethnic background, or whether they are disabled, and regardless of their financial status.

In 2022, the Saudi Council of Ministers approved a law to protect the rights of elderly people and their care. This law aims to enhance the status and well-being of the elderly, as well as maintaining their security and safety, protecting their rights, and ensuring their proper family and community care. There are provisions in the law to protect the physical and psychological rights of older people. The law also aims to promote volunteer activities in elderly care and offering special facilities for them in public and commercial places, residential areas, and mosques.

Article 27 of the Saudi Basic Law states that: "the state guarantees the right of the citizen and his family, in case of emergency, disease, disability, and old age, and supports the social security system, and encourages institutions and individuals to contribute to charitable works". Initiatives have been developed

وزارة التعليم
Ministry of Education
2026 - 1448

that aim to improve the quality of life and raise the level of services provided to the elderly in society in general and in care homes.

In Saudi Arabia, services for older adults are provided through an integrated system that includes several entities:

- The Ministry of Human Resources and Social Development is responsible for social care services, elderly care homes, protection services, and implementation of the Elderly Rights and Care Law.
- The Ministry of Health covers health care services, preventive care, primary care, and health support for older adults.
- The Family Affairs Council, particularly the Elderly Committee, raises awareness, and supports families, elderly rights, and community initiatives.
- Health clusters provide health care throughout the Kingdom.

These entities support elderly rights, social care, healthcare access, family awareness, and protection from neglect or abuse.

In the private sector, there are specialized civil associations for the elderly, whose services cover all regions of the Kingdom. Waqar is a non-profit charitable association that has been set up to support the elderly in Saudi Arabia. The association aims to:

- Complement the sectors that serve the elderly.
- Create programs and initiatives that suit older people, in addition to contributing to improving the types of services provided to them.
- Raise awareness of the needs of the elderly and their care.
- Enhance the status of the elderly in society, highlighting their role, and raising awareness of their issues.

FIGURE 2–16 Older people should have opportunities to develop through access to the educational, cultural, religious, and recreational resources of society in general.

وزارة التعليم
Ministry of Education
2025 - 1448

Freedom from abuse is another important aspect of care. Abuse of the elderly can be physical, verbal, or psychological. Handling the individual roughly, denying food, water, or medication, yelling or screaming at the person, or causing fear are all forms of abuse. Abuse is sometimes difficult to prove. Frequently, the abuser is a family member or caretaker. Elderly individuals may want to protect the abuser or may even feel that they deserve the abuse. It is important for any health care team member who sees or suspects abuse of the elderly to report it to the proper agency.

checkpoint

1. What is Waqar?
2. What should a health care team member do if they see or suspect abuse of an elderly person?

Today's Research — Tomorrow's Health Care

People Living to 200 Years of Age?

Aging has always been considered a normal deterioration of the human body. This concept changed when Cynthia Kenyon, a geneticist at the University of California, and her research team discovered a set of genes in worms that seemed to regulate aging. By suppressing the action of one of the genes, Kenyon was able to increase a worm's lifespan by six times and keep it young.

Research started with a mutant tiny nematode worm, about 1 millimeter long, that appeared to live about 50% longer than other nematode worms. By looking for mutant genes, Kenyon discovered the *daf-2* gene, a gene that controls the aging process. Further research showed that the *daf-2* gene allows body tissues to respond to hormones. The mutant *daf-2* gene reduced this activity, making the tissue less responsive to hormones and allowing it to delay the aging process.

A second gene, the *daf-16* gene, was identified as the "fountain of youth" gene because it promotes youthfulness. These genes allowed the mutant worms not only to delay the aging process but also to remain youthful, similar to a 95-year-old functioning like a 45-year-old. The research showed that aging is regulated by genetics. Kenyon and other researchers are now working with roundworms, organisms as small as commas that get old and wrinkled in only ten days and rarely live longer than two weeks. By altering the worm's DNA *daf-2* gene, the researchers were able to increase the roundworm's lifespan to as much as 10–12 weeks. Additional studies throughout the world have shown that people living more than 100 years were more likely to have this same genetic mutation. If additional research can lead to an application of these factors in humans, aging can be postponed, and age-related diseases can be prevented. This is because age is the largest risk factor for many diseases. An individual is much more likely to experience development of a cancerous tumor at age 70 than at age 30.

Other researchers using this information are extending the lifespan of mice by more than 30% and are continuing to experiment with other mammals that have genes similar to those of humans. Their goal is to develop drugs that mimic the effects of the genes in the long-lived animals. If they succeed, many of the age-related diseases may be preventable, and individuals may remain youthful and productive throughout their lifespans.

Case Study Investigation Conclusion

Were you able to name several physical and emotional changes that Maryam is experiencing as a part of aging? What are some ways in which Reem can help to support Maryam's efforts to remain autonomous and involved?

وزارة التعليم
Ministry of Education
1026 | 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 85 14/06/2023 10:27

CHAPTER 2 SUMMARY

- Geriatric care is care provided to elderly individuals.
- The over-60s age group is increasing in numbers and uses health care services frequently.
- Some myths, or false beliefs, exist regarding elderly individuals.
- Physical changes occur in all individuals as a normal part of the aging process.
- The health care provider should be aware of these changes and provide individuals with ways to remain as autonomous as possible.
- Psychosocial changes also create special needs in the elderly. Retirement, death of a spouse, and disease and disability can cause stress.
- Although most elderly individuals remain mentally alert until death, some have periods of confusion and disorientation. Providing a safe and secure environment is of paramount importance.
- It is important for health care providers to respect the elderly and protect them from abuse.

Mini Case 2:1 A Misguided Friend

You are visiting a friend and talking about your work as a nurse assistant working with elderly people. Your friend tells you that she doesn't think she could do your job as she would rather work with people that she could have an intelligent conversation with. She comments that she is not looking forward to getting old and sick, and losing her memory.

analysis

1. How can you help your friend to understand that her beliefs about older people are not actually correct?

2. How can you demonstrate to your friend that elderly people are just as capable as anyone else of holding an intelligent conversation?

3. What could you do to help dispel the myths about older people in your local area?

Mini Case 2:2 The Frail Patient

Your 86-year-old grandmother, Haya, who lives with you and your family, is becoming increasingly frail, and she is easily confused. She likes to walk around the house but often cannot find her own room. She does recognize pictures of herself, and she usually knows who everyone is, although she does muddle people's names sometimes. She is often worried about time but can no longer read her watch.

analysis

1. How can you help Haya to find her room more easily?

2. What can you and your family do to help Haya and avoid causing her stress?

3. Should you involve her doctor in her care?

Mini Case 2:3 The Elderly Patient

Your patient Fahad complains of dry and itchy skin. He is irritable and tired during the day because he gets up three or four times at night to urinate. His daughter is finding him hard to manage because he uses excessive salt, pepper, and sugar on all his food but still complains that the food has no taste. He constantly talks very loudly and asks everyone to speak up or repeat what has been said.

analysis

1. What is happening to Fahad? Is there anything you can suggest to help him?

2. Can you suggest ways that Fahad's daughter can make mealtimes less stressful for everyone?

3. Should his nocturia be investigated? Why?

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 87 14/06/2023 10:27

REVIEW QUESTIONS

1. What measures can be taken to help an individual adapt to or cope with the impaired functioning because of these physical/structural changes in aging?

a. Dry, itching skin.
b. Decreased muscle tone.
c. Hearing loss and the inability to hear high-frequency sounds.
d. A decreased sense of taste.
e. Indigestion and constipation.

2. Differentiate between disease and disability.

3. List four factors that cause psychosocial changes in aging. For each factor, provide at least two examples of ways an individual can be helped to adapt or cope with the change.

4. Differentiate between acute dementia (delirium) and chronic dementia. Identify four possible causes for each type of dementia.

وزارة التعليم
Ministry of Education
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 88 14/06/2023 10:27

5. Identify factors that can decrease the speed and degree of physical changes in aging. Identify factors that can cause an increase.

6. How can someone be helped to adapt to retirement?

7. Why might an elderly person feel a loss of autonomy? How can they be helped?

8. How can elderly people who develop arthritis be helped to maintain their health and independence?

9. If an elderly person experiences dyspnea, what is happening and how can the condition be eased or avoided?

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 89 14/06/2023 10:27

10. How can aging affect an elderly person's circulation? What can be done to assist in maintaining health?

CRITICAL THINKING

1. Layla is an 83-year-old mother of eight and grandmother of 21. Her family is very close and loves to visit at her house every week. They have a meal, talk, and play games. Layla fell and fractured her hip. She had surgery and is now in a rehabilitation unit at the local hospital. She has started to lose weight because she doesn't like the food at the hospital. Noura is her physical therapist and has studied geriatric care. What changes can Noura make for her rehabilitation routine and what might she suggest to the dietary department and other staff to promote Layla's healing?

وزارة التعليم
Ministry of Education
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 90 14/06/2023 10:27

2. When a loved one becomes confused and disoriented, it impacts everyday life for both the individual and the individual's family. The financial, mental, and emotional burden can be heavy. Analyze this influence and create three ways that families can cope in a positive way with this new reality. In your answer, consider Saudi Arabia's efforts to improve the quality of care provided to the elderly.

ACTIVITIES

1. With a partner, create a display that shows the positive aspects of growing older. Use three pictures or graphs to further demonstrate these aging facts.
2. In groups of four, do the following:
   - **a.** Don a pair of vision-altering glasses, put one cotton ball in each ear, use a tie to bind one arm to chest to simulate mobility impairment, and put on thick work gloves. At your table, complete the following tasks:
     - **i.** Text your friend.
     - **ii.** Read a newspaper article.
     - **iii.** Take two yellow candies (to simulate medicine pills) from a childproof container.
   - **b.** After these activities are completed, write a one-page essay answering the following questions: What are the top three things that made accomplishing the everyday tasks the most aggravating? What interventions could your health care provider implement to address these concerns while supporting your autonomy?
   - **c.** In your group, consider this question: "If I was an assisted living facility administrator, what would be the top five methods of providing care for the residents that I would insist my staff implement?" Be ready to present your ideas to the class.
3. With a small group, use a shoebox to create the perfect memory care facility. Incorporate at least three reality orientation considerations to the physical building. Write a short essay explaining details of your reality orientation program and how this building supports those goals.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 91 14/06/2023 10:27

Link to digital lesson

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CHAPTER

3 NURSE ASSISTANT SKILLS

Case Study Investigation

A private hospital employs Khalid and Basmah as surgical nursing assistants. They work at a fast pace to keep up with the surgery schedule, procedures, and bedside care. At the end of this chapter, you will be asked about the skills that Khalid and Basmah will need to work in this type of medical/surgical unit.

LEARNING OBJECTIVES

After completing this chapter, you should be able to:

- Admit, transfer, or discharge a patient, demonstrating proper care of the patient's belongings.
- Position a patient in correct alignment and with no bony prominences exposed.
- Move and turn a patient in bed, using correct body mechanics.
- Perform the following transfer techniques: dangling, wheelchair, chair, stretcher, mechanical lift, observing all safety points.
- Make closed, open, and occupied beds, using correct body mechanics.
- Administer personal care for a patient, including oral hygiene, hair and nail care, and back rub.
- Administer a bed bath and help a patient take a tub bath or shower, observing all safety points.
- Measure and record a patient's intake and output.
- Assist a patient with eating and feed a patient.
- Administer a bedpan or urinal, and provide catheter care.
- Provide ostomy care.
- Collect specimens of urine or feces.
- Observe all safety precautions when handling urine or feces.
- Administer preoperative care as directed.
- Prepare a postoperative unit with all equipment in the correct position.
- Safely administer oxygen with an oxygen mask, nasal cannula, or tent.

KEY TERMS

alignment
anesthesia
catheter
dangling
defecate
dehydration
edema
intake
operative/intraoperative
ostomy
output
personal hygiene
postoperative
preoperative
pressure ulcer
specimens
urinary drainage unit
urinate

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Ministry of Education

GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 92 14/06/2023 10:27

3:1 ADMITTING, TRANSFERRING, AND DISCHARGING PATIENTS

As a health care team member in a hospital or long-term care facility, one of your responsibilities may be to admit, transfer, and discharge patients or residents. Although these procedures vary slightly in different facilities, basic principles apply in all facilities.

ADMITTING THE PATIENT

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Admission to a health care facility can cause anxiety and fear in many patients and their families. Even a transfer from one room or unit in a facility to another room or unit can cause anxiety because the individual has to adjust to another new environment. It is essential for the health care team member to create a positive first impression. By being courteous, supportive, and kind, the health care provider can do much to alleviate fear and anxiety. Giving clear instructions about how to operate equipment and the type of routine to expect, such as mealtimes, helps the patient or resident become familiar with the environment. It is also important not to rush while admitting, transferring, or discharging a patient. Allow the individual to ask questions and express concerns. If you do not know the answers to specific questions, refer these questions to your supervisor.

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Comm

Greet and identify the patient. Ask the patient if they prefer to be called by a particular name. Introduce yourself by name and title to the patient and to any family members present. If another patient is in the room, introduce the new patient. Explain the procedure and obtain consent.

- Close the door and pull the curtain for privacy. Ask the patient to change into a gown. Assist the patient as necessary. Position the patient comfortably in the bed or in a chair.

Most facilities have specific forms that are used during an admission, transfer, or discharge. A sample admission form is shown in **Figure 3–1**. In most facilities, the forms are computerized, and a laptop or tablet computer is used to enter patient information. Patient records are stored electronically and are called electronic health records. However, all forms list the procedures that must be performed, which will vary slightly from facility to facility. It is important for the health care team member to become familiar with the information required on such forms.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 93 14/06/2023 10:27

PATIENT PREFERS TO BE ADDRESSED AS: _____

MODE OF TRANSPORTATION:
❑ Ambulatory ❑ Other Smoker: Y❑ N❑
❑ Wheelchair _____
❑ Stretcher _____

FROM: ❑ E.R. ❑ E.C.F. ❑Home ❑ M.D.'s Office

COMMUNICATES IN ARABIC: ❑ Well ❑ Minimal ❑ Not At All ❑ Other Language (Specify) _____

❑ INTERPRETER (Name Person) ❑ None

Home Telephone No. ( ) _____

Work Telephone No. ( ) _____

ORIENTATION TO ENVIRONMENT:

❑ Armband Checked
❑ Bed Control
❑ TV Control
❑ Bathroom
❑ Personal Property Policy
❑ Call Light
❑ Phone
❑ Side Rail Policy
❑ Visitation Policy
❑ Smoking Policy

PERSONAL BELONGINGS: (Check and Describe)

❑ Clothing _____
❑ Jewelry _____
❑ Money _____
❑ Walker _____
❑ Wheelchair _____
❑ Cane _____
❑ Other _____

DENTURES:
❑ Upper ❑ Partial
❑ Lower ❑ None

CONTACT LENSES:
❑ Hard ❑ LT ❑ RT
❑ Soft

GLASSES: ❑ Y ❑ N

HEARING AID: ❑ Y ❑ N

PROSTHESIS: ❑ Y ❑ N
(Describe) _____

DISPOSITION OF VALUABLES:
❑ Patient ❑ Home
❑ Placed in Safe
Given To: _____
Relationship: _____
(Claim No.) _____

IN CASE OF EMERGENCY NOTIFY:
Name: _____
Relationship: _____
Home Telephone No. ( ) _____
Work Telephone No. ( ) _____

VITAL SIGNS:
TEMP: _____ ❑ Oral ❑ Rectal ❑ Axillary
PULSE: _____ ❑ Radial ❑ Apical
Respiratory Rate _____
B/P: _____ ❑ RT ❑ LT ❑ Standing ❑ Sitting ❑ Lying
HEIGHT: _____ WEIGHT: _____ ❑ Bedside ❑ Standing

ALLERGIES:
Medications:
❑ None Known
❑ Tape
❑ Other (List)
❑ Penicillin
❑ Sulfa
❑ Iodine
❑ Aspirin
❑ Morphine
❑ Demerol
Food: ❑ None Known
(Shellfish, Eggs, Milk, etc.)

MEDICATIONS: (Prescription/ Non-Prescription) Dose/Frequency Last Dose (Date/Time)
1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

DISPOSITION OF MEDICATIONS:
❑ None Brought to Hospital
❑ Sent Home _____
With _____
❑ To Pharmacy: (List)
_____
_____

ADMITTING DIAGNOSIS: _____

NURSE'S SIGNATURE: _____ RN/LVN Date _____ Time _____

FIGURE 3–1 A sample admission form.

- Much of the information on an admission form is used as a basis for the nursing care plan, so this information must be complete and accurate. If the patient is unable to answer the questions, a relative or the person responsible for the patient is usually able to provide the information. In some facilities, questions regarding medications and allergies are the responsibility of the nurse.
- When a patient is admitted to a facility, certain procedures are performed. These usually include measuring and recording vital signs, height and weight, and collecting a routine urine specimen. Follow correct techniques while performing these procedures.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 94 14/06/2023 10:27

- Complete a personal inventory list of the patient's clothing, valuables, and personal items to protect their possessions. The valuables are then put in the safe or sent to security, and a receipt is given to the patient or put on the patient's chart. If a patient is transferred or discharged, the valuables are taken from the safe and checked by both the health care provider and the patient.
- Orientate patients and family members to the facility. Instructions about how to operate the call signal, bed controls, television remote control (if present), telephone, and other similar equipment should be provided. Visiting hours, location of lounges, availability of services, such as religious services and activities, mealtimes, and other rules or routines in the facility, should be explained. Many facilities give patients and family members pamphlets or papers listing such information, but it is still important to explain the main information.

FIGURE 3–2 If the patient's condition permits, use a wheelchair to transfer the patient to the new room or unit.

TRANSFERRING THE PATIENT TO ANOTHER FACILITY

Transfers are done for a variety of reasons. A transfer is sometimes related to a change in the patient's condition. For example, a person may be transferred from or to an intensive care unit.

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Comm
The reason for the transfer should be explained to the patient and family. This is usually the responsibility of the physician or nurse. An organized and efficient transfer helps prevent fear and anxiety in the patient.
- The new room or unit must be ready to receive the patient. Clothing, personal items, certain equipment, and medications must be transferred with the patient.
- The health care provider should find out how to transport the patient. Wheelchairs (**Figure 3–2**), stretchers, and even the patient's bed can be used for the transfer.
- Correct procedures must be followed to prevent injury to both the patient and the health care provider. Many different models of wheelchairs and stretchers are available. It is important to read

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 95 14/06/2023 10:27

the manufacturer's instructions regarding the operation of any given piece of equipment. If no instructions are available, ask your immediate supervisor to demonstrate the correct operation of a particular wheelchair or stretcher. Do not use any equipment until you have been instructed how to use it.

- Mechanical lifts are frequently used to transfer weak or paralyzed patients. It is important to read the operating instructions provided with the lift. Straps, clasps, and the sling should be checked carefully for any defects. Smooth, even movements must be used while operating the lift. Patients are often frightened of the lift and must be reassured that it is safe.
- In home care situations, it is important to move unnecessary furniture out of the way during transfers.
- If the bed does not raise or lower, it is essential for the health care provider to observe correct body mechanics and to bend at the hips and knees instead of the waist. It is possible to rent hospital beds, wheelchairs, mechanical lifts, and other similar items for home care.
- Before a patient is moved or transferred, the health care provider must obtain approval or legal orders from their immediate supervisor. Never move or transfer a patient without proper authorization.
-
Safety
During any move or transfer, it is important to watch the patient closely. Note changes in pulse rate, blood pressure, respirations, and color. Observe for signs of weakness, dizziness, increased perspiration, or discomfort. If you note any abnormal changes, return the patient to a safe and comfortable position and check with your immediate supervisor. The supervisor will determine whether the move or transfer should be attempted.

DISCHARGING A PATIENT

A written physician's order is required before a patient or resident can be discharged from a facility. If an individual plans to leave the facility without permission, report this immediately to your supervisor. Facilities have special policies that must be followed when a person leaves against medical advice.

- When an order for discharge has been received, the health care team member must check and pack the patient's belongings. The personal inventory list completed at the time of admission must be checked to ascertain that all the patient's belongings have been packed. A careful check of the unit, including any drawers, closets, and storage areas, helps ensure that all items are found.

وزارة التعليم
Ministry of Education
2016 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 96 14/06/2023 10:27

- Check to make sure that the patient has received final instructions from the nurse or physician. These may include discharge instructions and prescriptions. Assemble any equipment to be given to the patient.
- Most facilities require that a staff member accompany the individual to a car. Some facilities allow patients to walk, but many prefer to transport patients by wheelchair. If a patient is to be transferred by ambulance, the ambulance attendants will bring a stretcher to the room. In this case, it is important for the health care provider to have the patient's belongings ready for the transport.
- Most agencies have forms or checklists that are used during discharge to ensure that all procedures are followed.

checkpoint

1. List three things that a health care team member should measure and record when a patient is admitted to a facility.
2. What are mechanical lifts used for?

3:2 POSITIONING, TURNING, AND MOVING PATIENTS

As a health care provider, you may be responsible for positioning, turning, moving, and transferring many patients. If these procedures are done correctly, you will provide the patient with optimum comfort and care. In addition, you will prevent injury to yourself and the patient.

It is essential to remember that improper moving, turning, or transferring of a patient can result in serious injuries to the patient or health care provider. Some patients cannot be moved safely without special assistance or mechanical devices. Other patients who have had back, neck, or hip surgeries can only be turned certain ways. If a patient has restrictions for moving or transferring, the restrictions should be posted outside the door. If you are not sure whether a patient can be moved or transferred safely, always ask your supervisor before attempting any procedure. Remember, you are legally responsible for the safety and well-being of the patient.

Safety

Correct body mechanics are required for all procedures discussed here. If you cannot move or turn a patient by yourself, get help.

ALIGNMENT

Patient care must be directed toward maintaining normal body **alignment**. Alignment is defined as positioning body parts in relation to each other to maintain correct body posture. The benefits of proper alignment include:

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 97 14/06/2023 10:27

FIGURE 3–3 A contracture is a tightening or shortening of a muscle usually caused by lack of movement or usage of the muscle.

FIGURE 3–4 Foot supports can be used to hold the feet at right angles and prevent foot drop, a common contracture.

FIGURE 3–5 Correct alignment for a patient positioned on their back in the supine position.

FIGURE 3–6 Foot protectors can help to prevent pressure ulcers on the heels.

- Preventing fatigue:
  - Correct alignment helps the patient feel more comfortable and prevents fatigue.
- Preventing contractures:
  - A contracture (**Figure 3–3**) is a tightening or shortening of a muscle usually caused by lack of movement or usage of the muscle.
  - Foot drop is a common contracture. It can be prevented in part by keeping the foot at a right angle to the leg (**Figure 3–4**).
  - Footboards, foot supports, and high-top tennis shoes can be used to keep the foot in this position.
  - Range-of-motion exercises also help to prevent contractures.
- Preventing pressure ulcers.

To align the patient who is lying on their back in a supine position (**Figure 3–5**):

- Position the patient's head in a straight line with the spine.
- Place a pillow under the head and neck to provide support.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 98 14/06/2023 10:27

- A pillow or rolled blanket may be placed under the lower legs, from the knees to 5 cm above the heels to provide support and keep the heels off the bed.
- Protector pads may be placed on the heels or elbows (**Figure 3–6**).
- Toes should point upward. You may place a footboard, pillow, or rolled blanket against the soles of the feet to achieve this. High-top tennis shoes can also be placed on the feet to keep them at this angle.
- Precaution Check the patient for comfort, safety, and support before leaving. Make sure no bony prominences are exposed and all body parts are supported.

To align the patient who is lying on their side (**Figure 3–7**):

- Place a pillow under the head and neck for support.
- Flex the lower arm at the elbow. It can be placed in line with the face.
- Support the upper arm, flexed at the elbow, on a pillow or rolled blanket.
- Flex both knees slightly. Place a firm pillow or rolled blanket between the legs. The pillow should extend from the upper leg to the ankle.
- Use a footboard, pillow, rolled blanket, or high-top tennis shoes to keep the feet at right angles (90 degrees) to the legs.
- Rolled washcloths or foam rubber balls may be placed in paralyzed hands to prevent contractures.
- Use pillows to support the back and abdomen.
- Protector pads may be placed on the ankles, heels, and elbows.
- Precaution Make sure that the patient's body is not twisted and that any one body part is not applying direct pressure on any other body part.

To align the patient who is lying on their abdomen (prone position):

- Place the head in a direct line with the spine.

FIGURE 3–7 Correct alignment for a patient positioned on their side.

FIGURE 3–8 A large pillow can be used to support the feet when the patient is lying in the prone position.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 99 14/06/2023 10:27

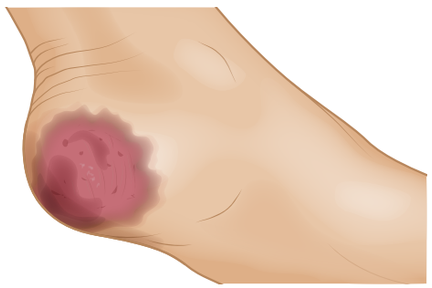

FIGURE 3–9A A stage I pressure ulcer.

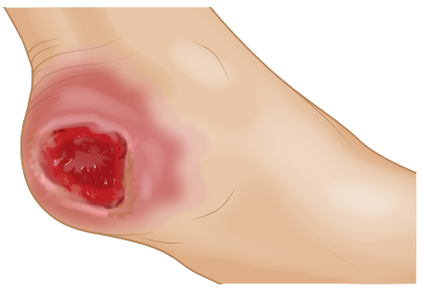

FIGURE 3–9C A stage III pressure ulcer.

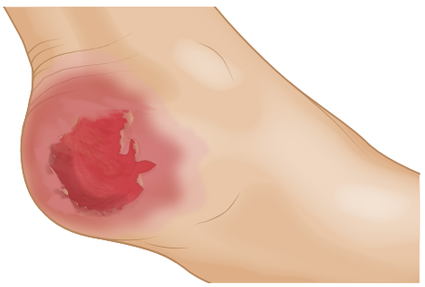

FIGURE 3–9B A stage II pressure ulcer.

FIGURE 3–9D A stage IV pressure ulcer.

- Turn the head to one side. It may be supported with a small pillow. Placing the pillow at an angle will keep it away from the patient's face.
- A small pillow may be placed under the waist for support.
- Place a firm pillow under the lower legs to slightly flex the knees.
- The feet can be extended over the end of the mattress so that they will remain at right angles to the legs. They can also be supported in this position by pillows or rolled blankets (**Figure 3–8**).
- Place the arms in line on either side of the head. Use pads to protect the elbows. Flex the elbows slightly for comfort.

PRESSURE ULCERS

A **pressure ulcer** (also called a decubitus ulcer, pressure sore, or bedsore) is a sore caused by prolonged pressure on an area of the body that interferes with circulation. Pressure ulcers are common in areas where bones are close to the skin, such as the tailbone (coccygeal area), hips, knees, ankles, heels, and elbows. The tissue breakdown of a pressure ulcer occurs in four stages:

- Stage I: a red or blue-gray discoloration appears on the intact skin (**Figure 3–9A**). The discoloration does not disappear after the pressure has been relieved.
- Stage II: abrasions, bruises, or open sores develop as a result of tissue damage to the top layers of the skin (epidermis and dermis) (**Figure 3–9B**).

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 100 14/06/2023 10:27

- Stage III: a deep open crater forms when all layers of the skin are destroyed, and fat and muscle tissues are exposed (**Figure 3–9C**).
- Stage IV: damage extends into the muscle, tendon, and bone tissues (**Figure 3–9D**).

It is easier to prevent pressure ulcers than it is to treat them. If pressure ulcers are detected in the early stages, immediate treatment can help prevent further damage. Effective ways of preventing pressure ulcers include:

- Providing good skin care.
- Using moisturizing lotions on dry skin.
- Prompt cleaning of urine and feces from the skin.
- Massaging in a circular motion around a reddened area.
- Frequent turning (at least every two hours).
- Positioning to avoid pressure on irritated areas.
- Keeping linen clean, dry, and free from wrinkles.
- Applying protectors of sheepskin, lamb's wool, or foam to bony prominences, such as heels and elbows.

Pressure relief is the most important factor in preventing pressure ulcers. Over 100 different support surfaces or pressure-reducing products are available to prevent ulcers. Alternating air pressure mattresses (**Figure 3–10**) and continuous lateral rotation beds (that constantly turn the patient side to side) are among the most advanced pressure-reducing surfaces. Careful observation of the skin during bathing or turning is essential. If a pale, reddened, or blue-gray area is noted, this should be reported and documented immediately.

Treatment of pressure ulcers:

- Stage I and stage II pressure ulcers are often treated with special foam or hydrocolloid dressings along with frequent turning to keep pressure off the ulcer.
- Stage III and stage IV ulcers can be treated with these dressings, or they can be treated with negative-pressure wound therapy using a wound vacuum-assisted closure (**Figures 3–11A** and **3–11B**). A foam sponge is cut to fit the size of the open wound. A transparent adhesive film is placed over the sponge, and suction tubing is placed through the

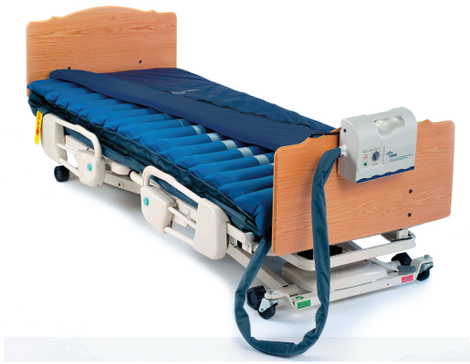

FIGURE 3–10 An alternating air pressure mattress constantly changes the pressure points against a patient's skin.

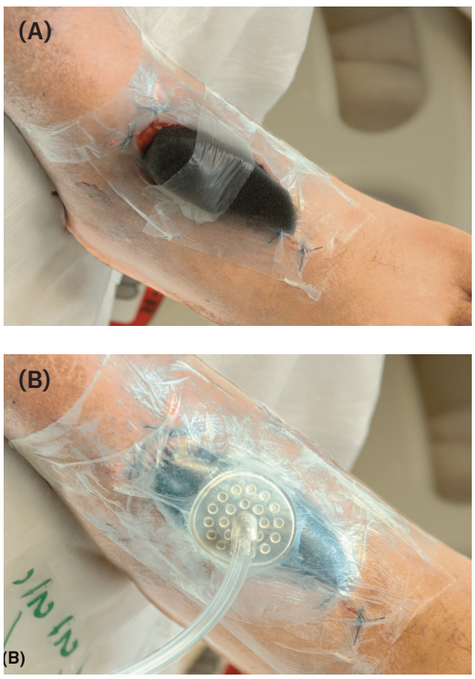

FIGURE 3–11 After a pressure ulcer or wound is covered with a gauze or foam dressing (A), the wound vacuum-assisted closure (B) is attached to apply negative pressure to the area to promote healing.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 101 14/06/2023 10:27

film dressing. The suction tubing is attached to the suction and a disposable collection canister. This device seals the wound and applies a negative pressure to promote healing and prevent infections. It works by drawing the wound edges together and removing exudate and infectious materials. It also reduces edema (swelling) and promotes perfusion by forcing the flow of fluid in the area.

TURNING A PATIENT

The patient confined to bed must be turned frequently. Their position should be changed at least every 2 hours, if permitted by the physician. Some agencies post a turning position schedule by the patient's bed; for example, 6 am: right side; 8 am: back; 10 am: left side; 12 pm: abdomen.

Frequent turning provides exercise for the muscles. It also stimulates circulation, decreases pulmonary congestion, helps prevent pressure ulcers and contractures, and provides comfort to the patient. Correct turning procedures must be followed to prevent injury to both the patient and the health care provider.

- Before turning or moving the patient:
  -
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    Knock on the door and pause before entering. Introduce yourself. Identify the patient. Explain the procedure and obtain consent.
  - Provide privacy. Close the door and pull the curtain.
  - Wash your hands and put on gloves.
  - Lock wheels to prevent movement of the bed and elevate the bed to a comfortable height.
  -
    Safety
    It is important to use proper body mechanics throughout the procedure. Use the weight of your body to move the patient. Avoid back strain.
- After the procedure:
  - Leave the patient in good body alignment. Make sure that the patient is comfortable.
  - Elevate the siderails (if indicated) before leaving the patient.
  - Make sure that the call signal and other needed supplies are within easy reach of the patient.
  - Lower the bed to its lowest level.
  - Report what has been carried out and record all required information on the patient's chart, or enter it into the electronic health record.
  - Replace all equipment. Make sure that the area is neat and clean.
  - Remove your gloves and wash your hands.

وزارة التعليم
Ministry of Education
2016 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 102 14/06/2023 10:27

MOVING A PATIENT UP IN BED

- One person should be on each side of the bed.
- Lower the head of the bed. Remove all pillows. One pillow can be placed against the headboard of the bed to prevent injury to the patient's head while moving the patient up in bed.
- Safety Observe the patient for respiratory distress. If any breathing difficulty is noted, immediately raise the head of the bed. Check with your supervisor before proceeding.
- Position the lift sheet under the patient by turning the patient to one side (**Figure 3–12A**). The lift sheet can be folded to the center of the bed. Make sure it extends under the patient's head, shoulders, hips, and thighs. Turn the patient to the opposite side and unfold the lift sheet so it covers the entire bed. Turn the patient on their back.
- Two people use the lift sheet to move the patient. One person stands on each side of the bed. Each person positions one hand on the lift sheet by the patient's shoulders and the other hand by the patient's hips.
- Each person faces the head of the bed and gets a broad base of support by putting one foot ahead of the other. Each person should be close to the patient and the bed.
- If the patient's condition permits, ask the patient to flex their knees and brace both feet firmly on the bed.
- The two health care providers roll the edges of the lift sheet inward, close to both sides of the patient's body (**Figure 3–12B**).
- At a given signal, the two health care providers lift the sheet and patient, and move the patient to the head of the bed (**Figure 3–12C**). Shift your weight from the rear leg to the forward leg at the same time that you slide the patient.
- After the patient is positioned, each team member tucks the lift sheet back into the side of the bed.

FIGURE 3–12A Position the lift sheet under the patient by turning the patient to one side.

FIGURE 3–12B Both health care team members should roll the edges of the lift sheet inward, close to both sides of the patient's body.

FIGURE 3–12C At a given signal, the two health care providers lift the sheet and patient, and move the patient to the head of the bed.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 103 14/06/2023 10:27

TURNING A PATIENT AWAY TO CHANGE POSITION

- If siderails are present and elevated, lower the siderail nearest to you. Make sure the opposite siderail is raised and locked securely.
- The patient should be lying on the side of the bed close to you. If so, continue to the next step. If the patient is at the center or close to the far side of the bed, move the patient as follows:
  - Place one hand under the patient's head and neck. Place your other hand under the patient's upper back. Slide the upper part of the patient's body toward you.
  - Place both hands under the patient's hips. Slide the hips toward you.
  - Place both hands under the patient's upper and lower legs. Slide the legs toward you.
  - If you are not able to move the patient, get help.

Safety

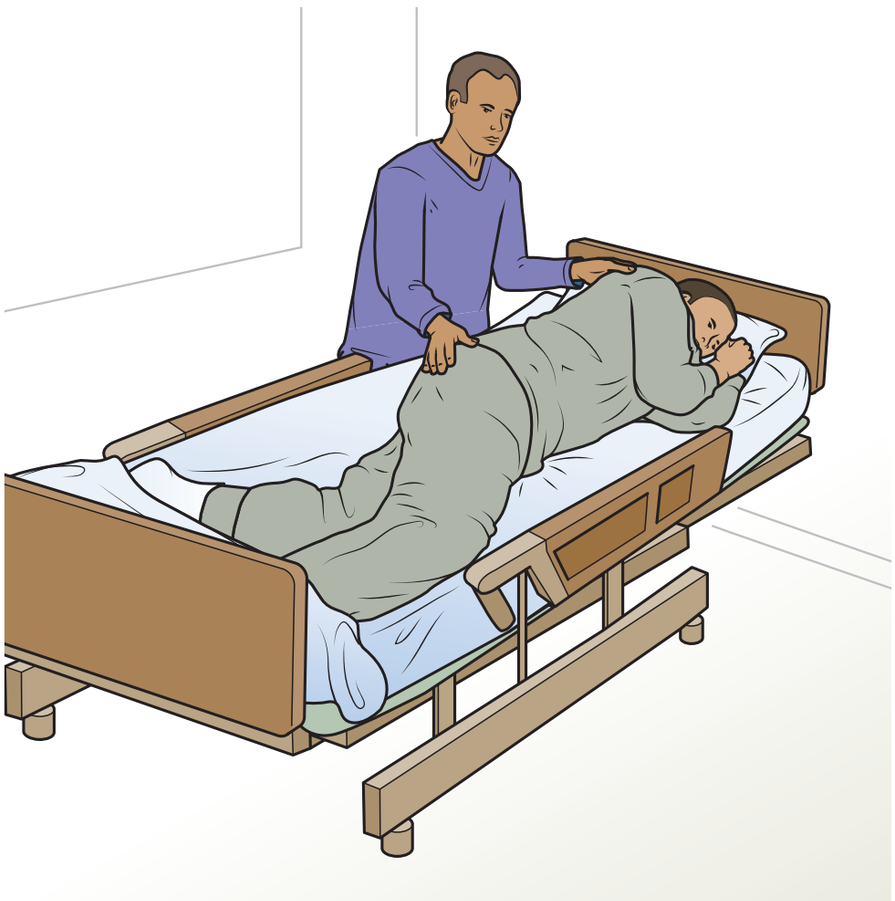

FIGURE 3–13 Place one hand under the patient's shoulder, and the other hand under the patient's hip. Use a smooth, even motion to roll the patient away.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 104 14/06/2023 10:27

- Ask the patient to place their arms across the chest and move the proximal leg (the one closest to you) over the other leg. This will make it easier to turn the patient and helps to prevent injury.
- Safety Do not cross the patient's legs if they have had hip replacement surgery.
- Get close to the patient by bending your knees and keeping your back straight. Position your feet to provide a broad base of support. Place one hand under the patient's shoulder, and the other hand under the patient's hip. Use a smooth, even motion to roll the patient away from you and onto their side (**Figure 3–13**).
- Place your hands under the patient's head and shoulders. Draw the head and shoulders back toward the center of the bed.
- Place your hands under the patient's hips and gently pull them back toward the center of the bed. Then place your hands under the patient's legs and pull them back toward the center of the bed.
- Place a pillow behind the patient's back, between the legs to align the hips, and under the upper arm. Make sure the patient is comfortable and in good alignment.

TURNING THE PATIENT INWARD TO CHANGE POSITION

- Lower the siderail nearest to you, if present and elevated.
- If the patient is too close to the near side of the bed, move them to the opposite side as follows:
  - Place one hand under the patient's head and shoulders and the other hand under the patient's back. Slide the upper part of the body toward the opposite side of the bed.
  - Place both hands under the patient's hips. Slide the hips toward the opposite side of the bed.
  - Place both hands under the patient's legs. Slide the legs toward the opposite side of the bed.
- Instruct the patient to cross their arms on their chest. Place the patient's leg that is farthest from you on top of the leg that is nearest to you. This prevents injury to the patient's arms and legs.
- Safety Do not cross the patient's legs if they have had hip replacement surgery.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 105 14/06/2023 10:27

- Get close to the patient by bending your knees and keeping your back straight. Position your feet to provide a broad base of support. Place your hand that is closest to the head of the bed on the patient's far shoulder. Place your other hand behind the patient's hip (**Figure 3–14A**). Use your knee to brace your body against the side of the bed. Use a gentle, smooth motion to roll the patient toward you (**Figure 3–14B**).
- A lift sheet can also be used by one or two health care providers to turn the patient. The team members grasp the edges of the lift sheet and roll the edges inward close to the patient's body (**Figure 3–14C**). At a given signal, the team members use a smooth, even motion to turn the patient inward (**Figure 3–14D**).
- Raise and secure the siderail, if indicated. Go to the opposite side of the bed and lower the siderail, if present and elevated.
- Place your hands under the patient's head and shoulders and draw the head and shoulders back toward the center of the bed.
- Place your hands under the patient's hips and draw them toward the center of the bed.

FIGURE 3–14A Position your hands on the patient's far shoulder and hip.

FIGURE 3–14B Use a gentle, smooth motion to roll the patient toward you.

FIGURE 3–14C A lift sheet can also be used by one or two health care providers to turn the patient.

FIGURE 3–14D At a given signal, the team members use a smooth, even motion to turn the patient inward.

وزارة التعليم
Ministry of Education
2016 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 106 14/06/2023 10:27

- Place your hands under the patient's legs and draw them toward the center of the bed.
- Place pillows behind the patient's back, between the legs, and under the upper arm to position the patient in good body alignment. Make sure that the patient is comfortable.

DANGLING

If a patient has been confined to bed for a period of time, the patient is frequently placed in a **dangling** position before being transferred from the bed. Dangling means sitting with the legs hanging down over the side of the bed. This allows the patient some time to adjust to the sitting position.

- Lower the bed to its lowest level. If siderails are present and elevated, lower the siderail on the side where the patient is to dangle.
- Check the patient's radial pulse. This will serve as a guideline on how the patient tolerates the procedure (the control, or resting, rate).
- Check blood pressure to determine the patient's tolerance of the procedure. Blood pressure is taken while lying down, sitting, and standing. A patient might experience a drop in blood pressure with position changes, a condition called *orthostatic hypotension*.
- Also observe the patient's respiratory rate, balance (the patient may complain of vertigo or dizziness), amount of perspiration, color, and other similar characteristics.
- Slowly elevate the head of the bed to a sitting position. Provide time for the patient to adjust to this position.
- Get close to the patient by bending your knees and keeping your back straight. Position your feet to provide a broad base of support. Place your arm that is nearest to the head of the bed around the patient's shoulders. Place your other arm under the patient's knees (**Figure 3–15A**). Slowly rotate the patient toward the side of the bed (**Figure 3–15B**). Rest the patient's feet on a footstool if necessary.
- Safety Stand in front of the patient to prevent falls.

FIGURE 3–15A Place one arm around the patient's shoulders and the other arm under their knees.

FIGURE 3–15B Slowly rotate the patient toward the side of the bed.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 107 14/06/2023 10:27

- Check the patient's radial pulse. Note any signs of distress, such as pale color, increased perspiration, labored respirations, weakness, dizziness, or nausea.
- Safety If the pulse rate shows an abnormal increase, the blood pressure drops measurably, respirations become labored, color becomes pale, increased perspiration is noted, or the patient gets dizzy or very weak, they should be returned immediately to the supine, resting position.
- Instruct the patient to flex and extend the legs and feet. This increases circulation to the area and stimulates the muscles.
- Have the patient dangle for the time ordered or as their condition permits.
- When the time is up, place one arm around the patient's shoulders and your other arm under the patient's knees. Gently and slowly return the patient to the bed.
- Lower the head of the bed and position the patient in good alignment.
- Check the patient's radial pulse again and note any major changes. Report any changes immediately.

TRANSFERRING A PATIENT TO A CHAIR OR WHEELCHAIR

- Position the chair or wheelchair. It can be placed at the head of the bed facing the foot or at the foot of the bed facing the head. Positioning often depends on other equipment in the room. Whenever possible, the chair should be positioned so that it is secure against a wall or solid furniture and will not slide backward.
- Lock the wheels of the wheelchair. Raise the footrests so that they are out of the way (**Figure 3–16A**). Double-check the locks.
- Lock the bed to prevent movement. Lower the bed to its lowest level and slowly elevate the head of the bed.
- If siderails are present and elevated, lower the siderail on the side that the patient is to get out of the bed. Fanfold the bed linen to the foot of the bed.
- Assist the patient to a sitting position on the side of the bed with their feet flat on the floor. Observe for any signs of distress. Note color, pulse rate, breathing, and other similar signs. Put socks and shoes or slippers with nonslip soles on the patient. Put a transfer (gait) belt on the patient.
- Keep your back straight. Place one hand on each side of the belt using an underhand grasp. Face the patient and stand close to the patient.

وزارة التعليم
Ministry of Education
2016 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 108 14/06/2023 10:27

Position your feet to provide a broad base of support. If the patient has a weak leg, support the leg by positioning your knee against the patient's knee or by blocking the patient's foot with your foot.

- If the use of a transfer belt is contraindicated, place your hands under the patient's arms and around the back of the shoulders to provide support.
-
Comm
Arrange a signal with the patient, such as counting to three. Instruct the patient to push against the bed with their hands to rise to a standing position.
- At the given signal, assist the patient to a standing position. Lift up on the belt while the patient pushes up from the bed (**Figure 3–16B**). Place your knees and feet firmly against the patient's knees and feet to provide support.
- Allow the patient to adjust to the upright position. Then, keeping your hands in the same position, help the patient turn by using several pivot steps until the backs of their legs are touching the seat of the chair (**Figure 3–16C**).
- Ask the patient to place their hands on the armrests and to bend at the knees as you gradually and slowly lower them to a sitting position in the chair (**Figure 3–16D**).
- Position the patient comfortably. Remove the transfer belt. Use a blanket to cover the patient's lap and legs. Lower the footrests of the wheelchair and position the patient's feet on the footrests, taking care not to hit the patient's feet (**Figure 3–16E**).
- Observe the patient for any signs of distress. Remain with them until you are sure there are no problems. If you leave the patient seated in a wheelchair or chair, make sure that the call signal and other supplies are within easy reach. Check on the patient at frequent intervals.
- If you are transporting the patient in the wheelchair, low down and look for other traffic at doorways. To enter an elevator, turn the chair around and back into the elevator. To go down a steep ramp, turn the chair around and back down the ramp. Use the weight of your body to push the chair. Stand close to the chair. Watch the patient closely for signs of distress while transporting.
- To return the patient to bed, reverse the procedure, beginning by putting a transfer belt on the patient and raising the footrests.
-
Safety
Be sure the wheels are locked before helping the patient out of the wheelchair. Lock the bed to prevent movement.
- Position the patient in good body alignment after returning them to bed.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 109 14/06/2023 10:27

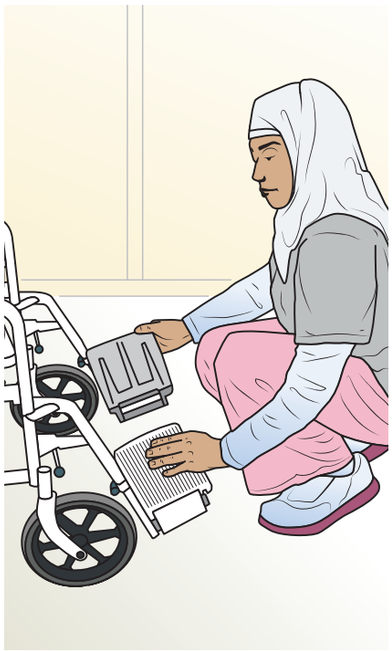

FIGURE 3–16A Lock the wheels and raise the footrests before transferring a patient to a wheelchair.

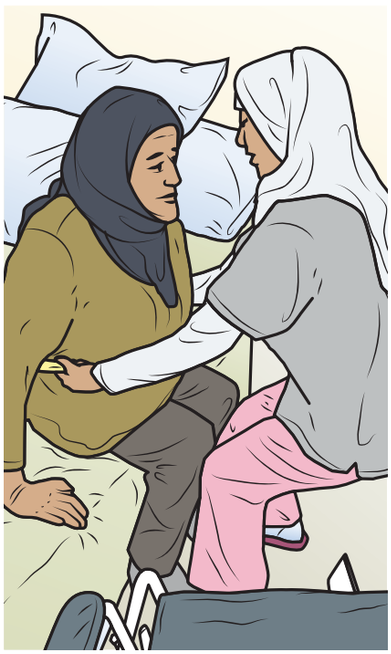

FIGURE 3–16B Lift up on the belt while the patient pushes up from the bed.

FIGURE 3–16C Help the patient turn until the backs of their legs are touching the seat of the chair.

FIGURE 3–16D Gradually and slowly lower the patient to a sitting position in the chair.

FIGURE 3–16E Lower the footrests and position the patient's feet on the footrests.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 110 14/06/2023 10:27

TRANSFERRING A PATIENT TO A STRETCHER

- Place a blanket over the patient. Fold bed linen to the foot of the bed. Avoid exposing the patient.
- Place the stretcher next to the bed. The bed and the stretcher should be parallel.
- Lock the wheels of the stretcher. In addition to the locks, use the weight of your body to hold the stretcher against the bed during this procedure.
- If the patient is conscious and capable of moving unassisted, reach across the stretcher and hold up the blanket. Ask the patient to slide from the bed to the stretcher. Hold the stretcher against the bed (**Figure 3–17**). If the patient needs assistance, help by moving first the patient's head and shoulders, then the patient's hips, and finally the patient's legs and feet.
- If the patient is very weak, paralyzed, semiconscious, or unconscious, obtain the assistance of three or four other team members:
  - Position a lifting sheet or blanket under the patient, extending from the patient's head and neck to the feet.
  - Two or three people should stand by the stretcher and two or three people on the open side of the bed.
  - Roll the sides of the lifting sheet or blanket close to the patient's body.
  - Using overhand grasps, one assistant should grasp the sheet by the patient's head and waist. The second assistant should grasp the sheet by the hip and leg. The assistants on the open side of the bed should grasp the sheet in the same areas. If a third assistant is available for one or both sides, they should be positioned so the patient's weight is equally distributed among the three.
  - At a given signal, all assistants should lift the sheet slightly to gently slide the patient from the bed to the stretcher. Some facilities use slider boards instead of a lifting sheet or blanket.

FIGURE 3–17 Hold up the blanket and use the weight of your body to hold the stretcher against the bed while the patient is moving to the stretcher.

FIGURE 3–18A Team members on both sides of the stretcher should roll the sides of the lift sheet close to the patient and position themselves so all parts of the patient's body are supported.

FIGURE 3–18B At a given signal, all assistants should lift the sheet slightly to gently slide the patient from the stretcher to the bed.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 111 14/06/2023 10:27

- Position the patient comfortably on the stretcher. Lock the safety belt(s). Raise both siderails of the stretcher.
- To transport the patient, two persons should direct the stretcher (one at the head and one at the foot). Unlock the wheels of the stretcher. Move slowly. The stretcher patient always travels feet first. When going down an incline, the person at the foot of the stretcher should go backward and use body weight to control the stretcher. To enter an elevator, push the correct button to keep the elevator door open. Back the stretcher into the elevator so that the head end enters first. To leave the elevator, push the button to keep the door open, and push the stretcher out feet end first.
- To return the patient to bed, reverse the procedure, beginning with locking the wheels of the stretcher and bed and unlocking the safety belt(s). Then proceed as shown in **Figures 3–18A** and **3–18B**.

USING A MECHANICAL LIFT TO TRANSFER A PATIENT

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The manufacturer will indicate the weight limits for the mechanical lift. Do not use the mechanical lift if the patient weighs more than the weight limit.

-

Most facilities require that two health care providers perform this procedure. One person operates the lift while the second person guides the movements of the patient.

- Check the straps, sling, and any clasps to make sure there are no defects. Check the hydraulic unit and look for evidence of oil leaks. Do not use the lift if straps or sling are torn or defective, if clasps are not secure, or if oil is leaking from the hydraulic unit. Serious injury may result. Label the defective mechanical lift with a warning or lock-out and notify your supervisor immediately.
-

Patients are often apprehensive about being transferred by lift. It is important that they be as relaxed as possible for the transfer. Constant reassurance and encouragement are necessary.

- Position the chair or wheelchair next to the foot of the bed, with the open seat facing the head of the bed. Lock the wheels of the wheelchair. Raise the footrests to the upright position.
- Lock the wheels of the bed. If siderails are present and elevated, lower the siderail on the side of the transfer.

وزارة التعليم
Ministry of Education
2016 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 112 14/06/2023 10:27

- Turn or move the patient to position the sling under the patient. The sling should be positioned under the shoulders, buttocks, and thighs. Make sure that the sling is smooth and that the center is near the center of the patient's back (**Figure 3–19A**).
- Position the mechanical lift over the bed (**Figure 3–19B**). Open the base of the lift to its widest position to provide a broad base of support.
- Attach the suspension straps to the sling. Insert the hooks from the inside of the sling to the outside to keep the open end of the hooks away from the patient's body. Make sure that the straps are not tangled or twisted. If clasps are present on the hooks, make sure they are secure.
- Attach the suspension straps to the frame of the lift (**Figure 3–19C**). Check to make sure that the straps are locked to the frame or attached securely. Make sure that the straps are not tangled or twisted. Position the patient's arms inside the straps. Encourage the patient to keep their arms folded across the chest to keep the arms inside the straps.
- Turn the crank or use the hydraulic control to slowly raise the patient slightly above the bed. Check the straps, sling, and position of the patient to be sure that the patient is suspended securely by the lift.
- Continue to raise the patient as needed until you can slowly turn the lift to move the patient away from the bed and into position over the chair or wheelchair. Keep all movements as smooth and even as possible (**Figure 3–19D**). Move slowly to prevent jerking motions that may frighten the patient.
- Slowly lower the lift to position the patient in the chair or wheelchair. Guide the patient's legs into position on the chair (**Figure 3–19E**).
- Unhook the suspension straps from the sling (**Figure 3–19F**). Remove the sling from under the patient (**Figure 3–19G**). At times, the sling is left in position under the patient. Carefully move the lift away from the patient.
-
  Safety

  Be careful not to injure the patient with the straps or lift while moving the lift away from the chair.
- To return the patient to bed, reverse the procedure. Begin by making sure the wheels of the chair and bed are locked. Attach the suspension straps securely to the sling.

checkpoint

1. What stage of tissue breakdown is a pressure ulcer that has abrasions, bruises, or open sores?
2. How frequently should a patient confined to bed be turned or repositioned?

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 113 14/06/2023 10:27

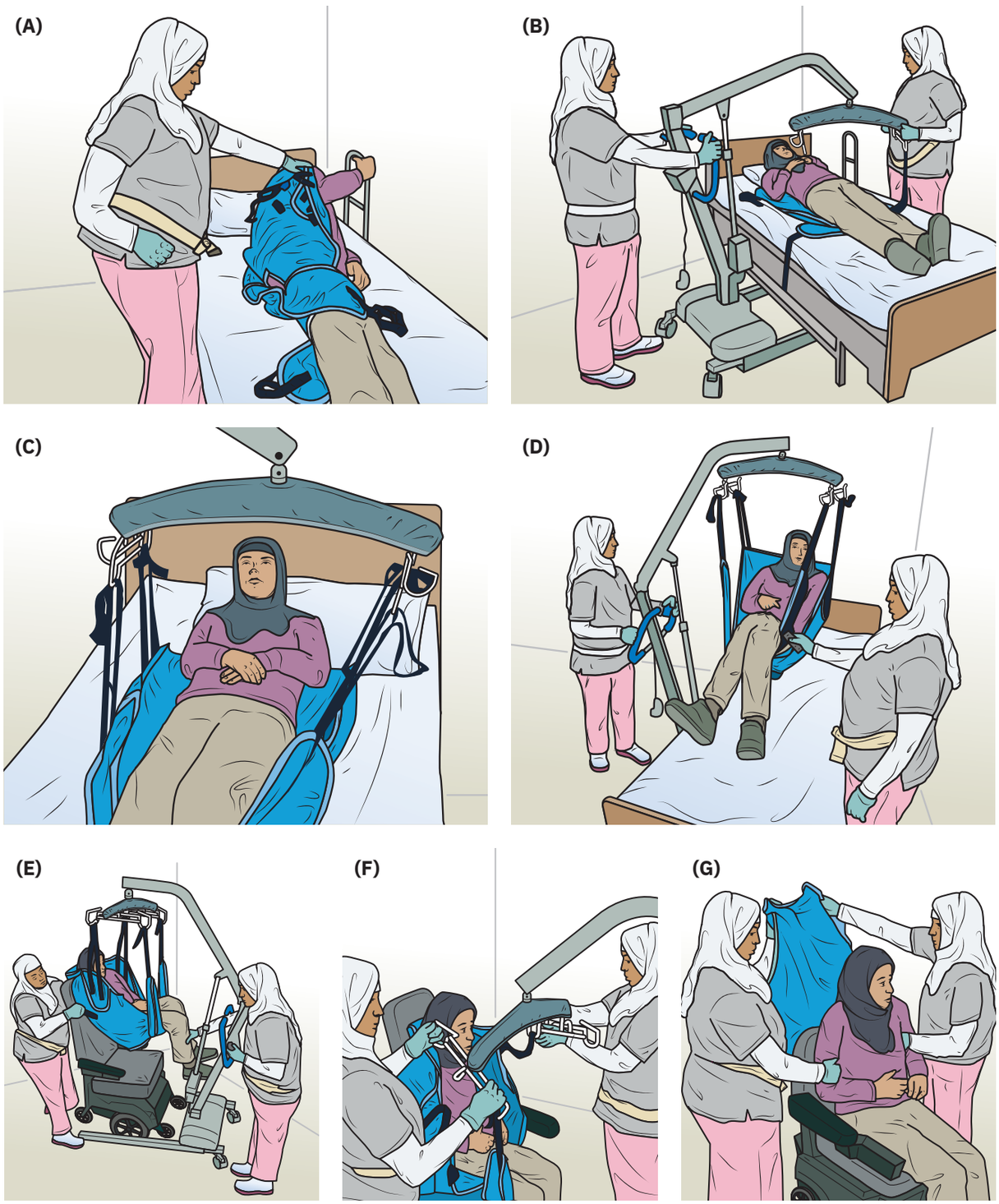

FIGURE 3–19 (**A**) Position the sling under the patient's shoulders, buttocks, and thighs. (**B**) Position the mechanical lift over the bed. (**C**) Attach the suspension straps to the frame of the lift and make sure that they are locked to the frame or attached securely. (**D**) Use a smooth motion to lift the patient out of the bed. (**E**) Slowly lower the lift to position the patient in the wheelchair. (**F**) Unhook the suspension straps from the sling. (**G**) Remove the sling from under the patient.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 114 14/06/2023 10:27

3:3 BEDMAKING

Making beds correctly is a task that must be performed by many health care providers. A correctly made bed provides comfort and protection for the patient confined to bed for long periods. Therefore, care must be taken when beds are made. The bed linen must be free of all wrinkles. Wrinkles cause discomfort and can lead to the formation of pressure ulcers.

Mitered corners are used to hold the linen firmly in place. Mitering corners is a special folding technique that secures the linen under the mattress (**Figure 3–20**). Mitered corners are also used for linen placed on stretchers and examination tables. Some agencies and homes use fitted contour sheets for bottom sheets.

Following are examples of the types of beds that you may be required to make:

- **Closed bed:** This is a bed made following the discharge of a patient and after terminal cleaning of the unit. Its purpose is to keep the bed clean until a new patient is admitted.
- **Open bed:** A closed bed is converted to an open bed by fanfolding (folding like the pleats of a fan) the top sheets. This is done to "welcome" a new patient and for patients who are ambulatory or out of bed for short periods.

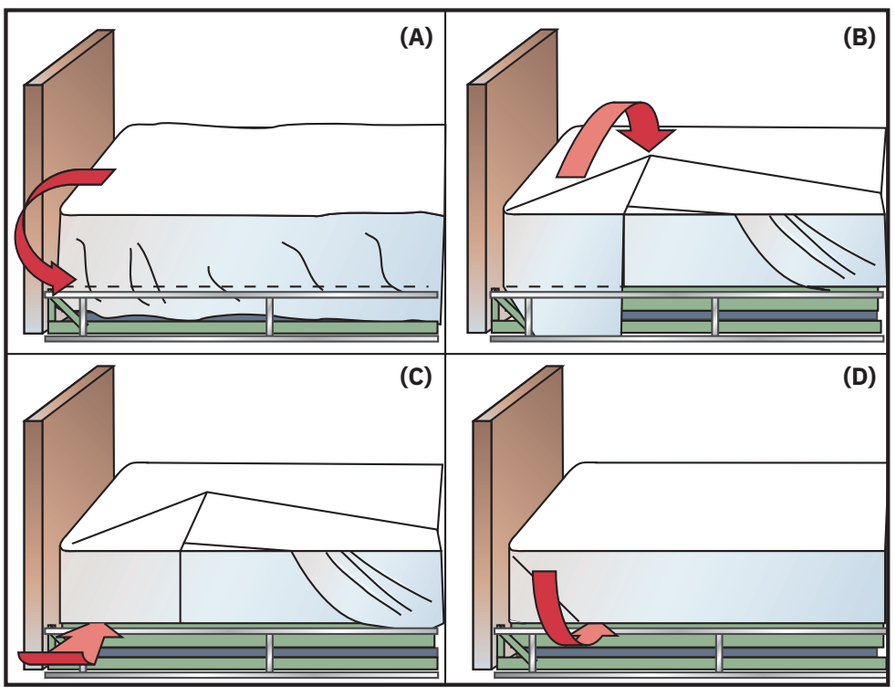

FIGURE 3–20 Steps for making a mitered corner.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 115 14/06/2023 10:27

FIGURE 3–21 Making an occupied bed

- **Occupied bed:** This is a bed made while the patient is in the bed (**Figures 3–21A** to **3–21D**).
- **Bed cradle:** A cradle is placed on a bed under the top sheets to prevent bed linen from touching parts of the patient's body (**Figure 3–22**). A cradle is frequently used for patients with burns, skin ulcers, lesions, blood clots, circulatory disease, fractures, surgery on legs or feet, and other similar conditions.

Draw sheets (also called lift sheets or transfer sheets) are half sheets that are frequently used on beds. A draw sheet extends from the patient's shoulders to the patient's knees. The draw sheet is used to protect the mattress. If soiled, the draw sheet can be changed readily without changing the bottom sheet of the bed.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 116 14/06/2023 10:27

FIGURE 3–22 A bed cradle supports the top linen and prevents the linen from coming into contact with the patient's legs and feet.

In some settings, disposable bed protectors, frequently called underpads, are placed under the patient to protect the sheets instead of using draw sheets. Draw sheets are also used as lift sheets.

To prevent injury to yourself, you must observe correct body mechanics while making beds. It is also important to conserve time and energy. Keeping linen arranged in the order of use is one way to conserve time and energy. In addition, most beds are made completely first on one side and then on the other side. This limits unnecessary movement from one side of the bed to the opposite side.

It is important to limit the movement of organisms, and thus the spread of infection, while making beds:

-
Precaution
Observe standard precautions. Wash your hands frequently and wear gloves while handling linen.
- Roll dirty or soiled linen while removing it from the bed. Linen may be contaminated by blood, body fluids, secretions, excretions, urine, or feces.
- Hold dirty linen away from your body and uniform, and place it in a linen hamper, cart, or bag immediately. Never place dirty linen on the floor.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 117 14/06/2023 10:27

- Some facilities do not allow linen hampers or carts in a patient's room. The hamper or cart is left in the hall. Soiled linen is placed in a pillowcase or plastic bag, carried to the hall, and placed in the hamper or cart.
- Remove the gloves and wash your hands after handling dirty linen and before handling clean linen.
- Before handling clean linen, the contaminated gloves should be removed, and the hands should be washed.
- Clean linen should be stored in a closed closet or on a covered linen cart. Never allow clean linen to contact your clothing. Never bring extra linen to the patient's room because it is then considered contaminated and cannot be used for another patient.
- Avoid shaking clean sheets. Unfold them gently. Place the open end of the pillowcase away from the door. This looks neater and also helps prevent the entrance of organisms from the hall.
- If there is any chance of contamination in the room, clean gloves should be applied before handling clean linen.

Many agencies have special self-dissolving plastic laundry bags that dissolve during the washing process. The contaminated linen is placed in the bag, and the bag is sealed. The bag is then placed inside another plastic bag and labeled before being sent to the laundry department. The second bag is necessary because wet linen may dissolve the water-soluble bag before it reaches the laundry department. The health care provider must be alert at all times to prevent the spread of infection by contaminated linen.

checkpoint

1. Bed cradles are used for patients with what conditions?
2. What is another term for a draw sheet?

3:4 ADMINISTERING PERSONAL HYGIENE

Administering personal care and hygiene may be one of your responsibilities as a health care provider. Ill patients often depend on health care team members for all aspects of personal care. The health care provider must be sensitive to the patient's needs and respect the patient's right to privacy while personal care is administered.

Personal hygiene includes bathing, back care, perineal care, oral hygiene, hair care, nail care, and shaving, when necessary. Such care promotes good habits of personal hygiene, provides comfort, and stimulates circulation. Providing such care also gives the health care provider an opportunity to develop a good and caring relationship with the patient.

وزارة التعليم
Ministry of Education
2016 - 1438
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 118 14/06/2023 10:27

TYPES OF BATHS

Different types of baths are given to patients. The type of bath depends on the patient's condition and ability to help.

- **Complete bed bath:** The health care provider bathes all parts of the patient's body, and also provides oral hygiene, back care, hair care, nail care, and perineal care. A complete bath is usually given to the patient who is confined to bed and is too weak or ill to bathe.
- **Partial bed bath:** The health care provider bathes some parts of the patient's body. The term "partial bath" has two meanings, both related to the patient's ability to help. If the patient is too weak to help, a partial bath means that only the face, arms, hands, back, and perineal area, are bathed by the health care provider. If the patient is able to wash most of their body, a partial bath means that the health care provider completes the bath, usually bathing the patient's legs and back. In both types of partial baths, the health care provider prepares the supplies needed by the patient.
- **Tub bath or shower:** Some patients are allowed to take tub baths or showers. The health care provider helps as needed by providing towels and supplies, preparing the tub or shower area, and assisting the patient as much as the situation demands. Many health care facilities have shower or tub chairs that are used for patients who cannot stand in a shower or climb into a tub (**Figure 3–23**). The shower chair must be cleaned and disinfected before and after every use.
- **Waterless bath:** Some facilities use prepackaged disposable cleansing cloths instead of basins of water for baths. The cleansing cloths contain a rinse-free cleanser and moisturizer, and can be warmed in a microwave (follow package instructions) or in a special warmer. The waterless bath is less tiring to the patient and helps preserve skin moisture, prevent drying, and is more gentle to the skin than most soaps. Most packages contain 8–10 cloths. Usually, one cloth is used for the face, neck, and ears; one for each arm and each leg; one for the chest and abdomen; one for the perineum; and one for the back and buttocks. The solution dries quickly on the skin, but a towel can be used to gently remove excess moisture. Extreme care must be taken to avoid overheating the cloths. Read and follow manufacturer's instructions.

FIGURE 3–23 A shower or tub chair is often used for patients who cannot stand in a shower or climb into a tub. It must be disinfected before and after every use.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 119 14/06/2023 10:27

FIGURE 3–24 Hold the dentures securely while brushing all surfaces.

FIGURE 3–25 Use a prepared swab to cleanse all parts of the patient's mouth while providing special oral hygiene.

ORAL HYGIENE

Oral hygiene means care of the mouth and teeth. Oral hygiene should be administered at least three times a day. If the patient's condition requires frequent oral care, it should be administered more often, usually at least every two hours. Proper oral hygiene prevents disease and dental caries, stimulates the appetite, and provides comfort. In addition, it aids in the prevention of halitosis (bad breath).

- **Routine oral hygiene** refers to regular, everyday toothbrushing and flossing. Many times, patients are able to provide their own care. In such cases, the health care provider provides all the necessary equipment and supplies. In other cases, the provider helps the patient to brush and care for their teeth and mouth.
- **Denture care** is necessary when a patient has dentures or artificial teeth. In some cases, the health care provider must help to clean the dentures. Patients may be sensitive about dentures, so it is important that the health care provider provides privacy and reassures the patient. Extreme care must also be taken to prevent damage to the dentures (**Figure 3–24**).
- **Special oral hygiene** is usually provided for the unconscious or semiconscious patient. Because many of these patients breathe through their mouths, extra care must be taken to clean all parts of the mouth. Special supplies are used for this procedure (**Figure 3–25**).

HAIR CARE

Hair care is an important aspect of personal care that is, unfortunately, frequently neglected. Patients confined to bed often have tangles and knots in their hair. Tangles or knots can be removed by combing a small section of hair at a time and working from the ends toward the scalp. Conditioners can help prevent tangles. Brushing stimulates circulation to the scalp. Brushing also removes dirt and lint, and helps keep the hair shiny and attractive.

وزارة التعليم
Ministry of Education
2016 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 120 14/06/2023 10:28

It is also important to observe the condition of the hair and scalp. Signs of disease, redness, scaling, scalp irritation, or any other conditions should be reported.

Shampooing must be approved by the physician. Various types of dry or fluid shampoos are available for patients confined to bed. Read all instructions carefully before using any of these products. Special devices are also available for use when shampooing the hair of a patient confined to bed (**Figure 3–26**).

FIGURE 3–26 Special devices are available for use when shampooing the hair of a patient confined to bed.

NAIL CARE

Nail care is another often-neglected area in the personal care of the patient. Nails harbor dirt, which can lead to infection and disease. In addition, rough or sharp nails can cause injury. It is important that nail care be included as a part of the daily personal care provided to the patient. However, nails should never be cut unless you receive specific orders to do so from the physician or your immediate supervisor.

Clean the nails by soaking them for 5–10 minutes in a solution of mild detergent and water at a temperature of 40.6–43.3°C. This loosens the dirt in the nail beds. Use the slanted or blunt edge of an orange stick to clean dirt out of the nail beds under the nails (**Figure 3–27**). A nail brush can also be used to clean the nails. Carefully check the nails and surrounding skin while cleaning the nails.

FIGURE 3–27 After soaking the nails, use the slanted or blunt edge of an orange stick to clean dirt out of the nail beds under the nails.

Use an emery board to file the nails and shorten them. Use short strokes. Work from the side of the nail to the top of the nail. Repeat for the opposite side. Do not use a back-and-forth motion. Such a motion can split the nails.

Cutting nails may cause injury. In some facilities, only licensed or advanced practice personnel are allowed to cut fingernails. If you are permitted to cut fingernails, use nail clippers, not scissors, and clip the nails straight across. Never cut below the tips of the fingers. Clip slowly and carefully to avoid accidentally damaging the skin around the nail. Then file the nails straight across to remove rough edges. Never cut toenails because injuries to the feet are prone to infection and slow healing. File toenails straight across.

وزارة التعليم
Ministry of Education
2026 - 1448

GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 121 14/06/2023 10:28

BACK RUB

Unless contraindicated by the patient's condition, a back rub is given as part of the daily bath. It can also be given at other times during the day and should be done at least once every eight hours for a patient confined to bed. A good back rub takes at least 4–7 minutes and stimulates circulation, prevents pressure ulcers, and leads to relaxation and comfort.

- Rub a small amount of lotion into your hands. Begin at the base of the spine.
- Rub up the center of the back to the neck, around the shoulders, and down the sides of the back. Rub down over the buttocks, around, and circle back to the starting point. Repeat this step four times.
- Use long, soothing strokes. Use firm pressure on the upward strokes and gentle pressure on the downward strokes (**Figure 3–28A**).
- Repeat the long, upward strokes, but on the downward strokes, use a circular motion (**Figure 3–28B**). Pay particular attention to bony prominences. Repeat this motion four times.
- Repeat the long, upward strokes, but on the downward strokes, use very small circular motions (**Figure 3–28C**). Use the palm of your hand to apply firm pressure. Pay particular attention to the bony prominences. Do this motion one time.
- Repeat the long, soothing strokes used initially (**Figure 3–28D**). Do this for 3–5 minutes.
- End with up-and-down motions over the entire back (**Figure 3–28E**). Do this for 1–2 minutes. This provides relaxation after stimulation.

It is important that the health care provider keeps their nails short to prevent injury.

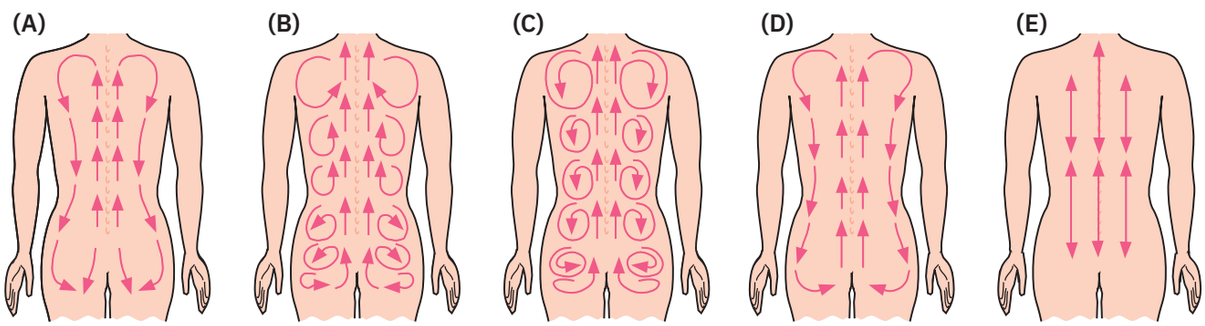

FIGURE 3–28A–E Motions for a back rub.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 122 14/06/2023 10:28

CHANGING A GOWN OR CLOTHING

Changing a patient's gown is also important. Hospital gowns usually open down the back and are easier to position and remove. If the patient has a weak or injured arm, or if an intravenous solution is being infused in one arm, the gown must be positioned with care. Usually, the sleeve of the soiled gown is removed from the uninjured or untreated arm first (**Figure 3–29**). This allows more freedom of movement while removing the sleeve from the injured or treated arm. Likewise, the sleeve of the clean gown is placed on the affected arm first and then on the unaffected arm. It is sometimes necessary to leave one arm out of the gown and place the sleeve on the unaffected arm only. Some agencies have gowns with openings at the shoulders. Such a gown can be placed over a treated arm and then closed with snaps, ties, or Velcro strips at the shoulder area.

In home care, gowns can be opened at the arm seam for easy application. Velcro strips or ties can then be applied so that the gown can be closed after being put on the patient. In long-term care facilities, most residents wear regular clothing during the day. It is important to help the resident as needed in choosing and dressing in appropriate clothing. If a resident has difficulty moving one side or is paralyzed, always put the clothing on the affected side first and remove it from the affected side last.

FIGURE 3–29 Keeping the IV container above the level of the infusion site, pass it through the arm of the gown.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 123 14/06/2023 10:28

OBSERVATIONS

When administering personal hygiene, it is important that the health care provider remains alert for any signs that might be unusual. When performing any personal hygiene procedure, watch for and report any unusual observations, including:

- **Sores, cuts, injuries:** Any injuries noted on the skin, mouth, or scalp must be reported.
- **Rashes:** Any type of rash should be reported. Many times, a rash is the first sign of an allergic reaction to a medication.
- **Color:** Any unusual color should be noted. Redness (erythema) of the skin is often the first sign of a pressure ulcer. A blue color (cyanosis) is a sign of poor circulation. A yellow color (jaundice) is a sign of liver disease, bile obstruction, or destruction of red blood cells.
- **Swelling (edema):** This can indicate poor circulation or disease and should be reported immediately. Pay particular attention to the hands, feet, ankles, and toes.
- **Other signs of distress:** Difficult breathing (dyspnea), dizziness (vertigo), unusual weakness, excessive perspiration (diaphoresis), extreme pallor, or abnormal drowsiness or sluggishness (lethargy) should be reported immediately.

Precaution

When administering personal hygiene, standard precautions must be observed at all times. Hands must be washed frequently, and gloves must be worn. Contact with blood, body fluids, secretions, or excretions is possible. A gown must be worn if contamination of a uniform or clothing is likely. A mask and protective eyewear, or a face shield, must be worn if droplets of blood or body fluids are present, such as when a patient is coughing excessively. Health care team members with cuts, sores, or dermatitis on their hands must wear gloves for all patient contact. Preventing the spread of infection is a major responsibility of the health care provider.

Always be sensitive to the patient's feelings and respect the patient's rights. Knock on the door and pause before entering a patient's room. Provide privacy during procedures by closing the door and pulling the curtain. Avoid exposing the patient when administering personal hygiene. Explain all procedures and reassure the patient as needed. Observe legal responsibilities and professional ethics at all times.

checkpoint

1. How frequently should oral hygiene be administered?
2. How do you get tangles or knots out of hair?

وزارة التعليم
Ministry of Education
2016 - 1438
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 124 14/06/2023 10:28

FIGURE 3–30 A nasogastric tube is inserted through the nose, down the esophagus, and into the stomach.

FIGURE 3–31 An orogastric tube is inserted through the mouth, down the esophagus, and into the stomach.

3:5 MEASURING AND RECORDING INTAKE AND OUTPUT

Science

A record of how much fluid is taken in and eliminated by a patient often helps a physician to provide care to the patient. A large part of the body is fluid, so there must be a balance between the amount of fluid taken into the body and the amount lost from the body. In a healthy individual, the fluid balance is usually regulated by the body structures to maintain homeostasis, or a natural balance. However, if an individual has heart or kidney disease, or loses large amounts of fluids through vomiting, diarrhea, excessive perspiration, or bleeding, the fluid balance may be abnormal. If excessive fluid is retained by the body, **edema** (swelling) results. If excessive fluid is lost from the body, **dehydration** occurs. Either condition can lead to death if not treated. In such cases, physicians may order that a record be kept of all fluids taken in and discharged from the body. This record is usually called an intake and output record. An intake and output record is a means of recording all fluids a person takes in and eliminates during a certain period. Each agency has its own paper or computerized form, but most contain similar information.

INTAKE

Intake refers to all fluids taken in by the patient. The following routes and liquids must be considered:

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 125 14/06/2023 10:28

FIGURE 3–32 A gastrostomy tube is surgically inserted through the abdominal skin into the stomach.

FIGURE 3–33 A feeding pump is usually used to administer enteral (tube) feedings.

- **Oral** intake is by way of the mouth. Liquids taken in orally include water, coffee, tea, milk, juices, and other beverages. In addition, soups, gelatin, ice cream, and other similar foods that are liquid at room temperature also qualify. The nurse assistant often measures and records or reports these amounts.
- **Enteral (tube) feeding** is used for patients who are unable to swallow, who are unconscious or comatose, or who have certain digestive diseases. Liquid is administered through a nasogastric, orogastric, or gastrostomy tube.
  - A nasogastric (NG) tube is a tube inserted through the nose, down the esophagus, and into the stomach (**Figure 3–30**).
  - An orogastric (OG) tube takes the same route but enters through the mouth (**Figure 3–31**). A syringe can be used to instill food or medication into the NG or OG tube.
  - A gastrostomy tube is surgically inserted through the abdominal skin into the stomach (**Figure 3–32**).

  A feeding pump is used to administer the solution (**Figure 3–33**). The solution contains all the nutrients required by the body. A nurse or another legally authorized team member will administer the enteral feeding. The nurse assistant must:
  - Keep the patient's head elevated 30–45 degrees during the feeding and for 30–60 minutes after the feeding.
  - Make sure there are no kinks in the tubing.
  - Use extreme caution when turning or positioning the patient to avoid dislodging the tubing.
  - Provide frequent oral hygiene.
  - Notify the nurse immediately if the alarm sounds on the feeding pump, if the solution is not flowing through the tubing, or if the solution container is low or empty.
- **Intravenous (IV) feeding** refers to fluids given into a vein. Blood units, IV medications, and other IV solutions are measured. This measurement is the responsibility of the nurse or another legally authorized team member.

وزارة التعليم
Ministry of Education
2016 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 126 14/06/2023 10:28

OUTPUT

Output refers to all fluids eliminated by the patient. The following routes and liquids must be considered:

- **Bowel movement:** Liquid bowel movements are usually measured and recorded. Solid or formed feces are usually noted or described. The nurse assistant may measure and record or report this elimination.
- **Emesis:** Anything that is vomited is measured and recorded. Color, type, and other facts are usually noted. The nurse assistant often measures and records or reports emesis.
- **Urine:** All urine voided or drained via a catheter is measured and recorded. This may be the responsibility of the nurse assistant. A urine output of less than 30 milliliters per hour must be reported.
- **Tubes and drains:** Any irrigation or suction drainage, including drainage from nasogastric tubes, hemovacs, chest tubes, and other drainage tubes, is measured (**Figure 3–34**). The type, amount, color, and other facts about the drainage are noted. If an irrigating solution is injected into a tube and more solution returns, the excess amount is considered output. This measurement is the responsibility of the nurse or another legally authorized team member.

FIGURE 3–34 Suction drainage from a hemovac, one type of wound drainage system, is recorded as irrigation output on an intake and output record.

FIGURE 3–35 Place the graduate on a flat surface and obtain the reading at eye level to get an accurate measurement.

RECORDING INTAKE AND OUTPUT

Input and output records must be accurate. All amounts must be measured in graduates. A graduate is a container that is made of plastic or stainless steel and has calibrations for milliliters/cubic centimeters on the side. It is similar to a measuring cup and is used to obtain accurate measurements. The graduate should be held at eye level or placed on a flat surface and viewed at eye level to accurately record amounts (**Figure 3–35**). In addition, care must be taken when adding or totaling the columns in the record. Most records contain totals for 8-hour and 24-hour periods (**Figure 3–36**). Some agencies use 12-hour periods for intake and output totals.

Math

For input and output records, fluids are measured in metric units called milliliters (ml). A few measurement devices might use cubic centimeters (cc). However, 1 ml and 1 cc are the same amount. Therefore, 30 ml equals 30 cc.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 127 14/06/2023 10:28

INTAKE AND OUTPUT RECORD

Family Name	First Name	Attending Physician	Room No.	Hosp. No.
AL-KHALID	SAAD	DR. NASSER AL-AHMED	238	54-3201

Date 9/30	INTAKE				OUTPUT					OTHER				REMARKS
TIME	Oral	I.V.	Blood		Urine	Tube	Emesis	Feces						
7–8 AM	100													
8–9 AM	320						200							EMESIS– GREEN LIQUID
9–10 AM					420									
10–11 AM	100													
11–12 Noon				10										NG IRRIGATION NS
12–1 PM	240				310									
1–2 PM		850				200								NASOGASTRIC GOLD–BROWN
2–3 PM	60													
8 HOUR TOTAL	820	850		10	730	200	200							
3–4 PM														
4–5 PM	320	150						120						BROWN LIQUID
5–6 PM					280									
6–7 PM	180													
7–8 PM														
8–9 PM	100													
9–10 PM		500				240								NASOGASTRIC BROWNISH
10–11 PM					310									
8 HOUR TOTAL	600	650			590	240		120						
11–12 PM														
12–1 AM				10										NG IRRIGATION NS
1–2 AM	180				420									
2–3 AM														
3–4 AM							650							EMESIS– GREEN LIQUID
4–5 AM														
5–6 AM		600				180								NASOGASTRIC GOLD–BROWN
6–7 AM	100				380									
8 HOUR TOTAL	280	600		10	800	180	650							
24 HOUR TOTAL	1700	2100		20	2120	620	850	120						
	TOTAL INTAKE			3820	TOTAL OUTPUT			3170						

FIGURE 3–36 A sample intake and output record.

وزارة التعليم
Ministry of Education
2016 - 1438
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 128 14/06/2023 10:28

Various agencies have different policies for recording intake and output. In some agencies, the record is kept at the bedside. Team members note the intake and output of the patient and record the measurements on the record. At times, the patient is even taught to measure and write down the amounts. In other agencies, the record is kept on the patient's chart. Measurements are noted on a slip of paper and reported. The nurse, medical secretary, health unit coordinator, or an authorized team member then records the information on the chart's intake and output form. With computerized charting, totals are entered directly into the computer by the nurse or nurse assistant. Most computerized programs will automatically add all the columns.

Comm

Patients should be given careful instructions when an intake and output record is being kept. The patient must inform health care providers when they drink fluids not provided by the health care team. Sometimes, the patient records how many glasses of water or other liquids are consumed. Other times, the health care provider fills a water pitcher and then checks the quantity remaining before refilling the pitcher. The health care provider then subtracts this quantity from the total amount originally in the pitcher and records the difference as water intake. To avoid missing any amounts of oral intake, the health care provider must also think about fluid intake every time a glass, cup, or water pitcher is removed from the unit. If visitors bring milkshakes or other liquids, the amounts of these must also be recorded.

Precaution

Standard precautions must be followed at all times when body fluids, such as urine, emesis, liquid bowel movements, and drainage, are measured. Gloves must be worn while the fluids are being measured and discarded. Hands must be washed frequently and must always be washed immediately after gloves are removed. If splashing or spraying of fluids is possible, eye protection, a mask or face shield, and a gown must be worn. The graduate or measuring device for monitoring a patient's output must be used for that patient only. It should be discarded or sterilized when output is no longer measured. Any areas contaminated by body fluids when measurements are being obtained must be wiped with a disinfectant. The health care provider must constantly take steps to prevent the spread of infection.

checkpoint

1. What are two routes that are considered for liquid intake?
2. What units are liquids measured in?

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 129 14/06/2023 10:28

3:6 FEEDING A PATIENT

Good nutrition is an important part of a patient's treatment. It may be one of your responsibilities to make mealtimes as pleasant as possible for the patient. Mealtimes are often regarded as a time for social interaction. Most people prefer to eat with others. People who eat alone often have poor appetites and poor nutrition. In long-term care facilities, patients are encouraged to eat in the dining room. This provides an opportunity for social interaction with others. If a patient is confined to bed, it is important to talk with the patient while serving the food tray or feeding the patient.

Proper mealtime preparation is important. If the patient is ready to eat when the tray arrives, mealtime is likely to be more pleasant. Preparation before the tray is delivered includes:

- Offering the bedpan or urinal, or assisting the patient to the bathroom; clearing the room of any offensive odors by using a deodorizer or opening a window.
- Assisting the patient to wash their hands and face.
- Providing oral hygiene, if desired; many individuals want to brush their teeth before meals, especially before breakfast.
- Positioning the patient comfortably and in a sitting position.
- Clearing the overbed table and positioning it for the tray.
- Removing objects such as an emesis basin or bedpan from the patient's view; place such objects in the bedside stand, if they will not be needed.
- If a meal will be delayed because of x-rays or other treatments, be sure to explain this to the patient.

Check the tray carefully against the patient's name and room number and the type of diet ordered. If anything seems out of place (for example, a salt shaker provided with a salt-free diet, or sugar with a diabetic diet), check with your immediate supervisor or the dietitian. Never add any food to the tray without checking the diet order first.

Allow patients to feed themselves whenever possible. If necessary, assist by cutting meat, opening beverage cartons, and buttering bread. If a patient is blind or visually impaired, tell the patient what food is on the plate by comparing the plate to a clock. For example, say, "Steak is at 12 o'clock, peas and carrots are at 4 o'clock, and mashed potatoes are at 9 o'clock." Make sure all food and utensils are conveniently placed.

وزارة التعليم
Ministry of Education
2016 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 130 14/06/2023 10:28

Before feeding any patient, test the temperature of all hot foods. A small amount can be placed on your wrist to check temperature. Never blow on hot food to cool it.

Points to observe when feeding a patient include:

- Alternate the foods by giving sips of liquids between solid foods.
- Use straws for liquids unless the patient has dysphagia (difficulty in swallowing). Straws can force liquids down the throat faster and cause choking. A food thickener can be added to liquids to solidify them slightly and make them easier to swallow. A physician or dietitian must approve the use of this product.
- Offer only small bites of food at one time. Fill the spoon or fork one-third to one-half full.
- Hold the spoon or fork at right angles to the patient's mouth so you are feeding the patient from the tip of the utensil.
- Encourage the patient to eat as much as possible.
- Provide a relaxed, unhurried atmosphere.
- Give the patient sufficient time to chew the food.

Observe how much the patient eats so that a record of nutritional intake can be kept. If the patient does not like certain foods on the tray, ask your immediate supervisor or the dietitian whether a substitute can be provided. Record intake if an intake and output record is being kept for the patient.

Safety

Always be alert to signs of choking while feeding a patient. Take every effort to prevent choking by feeding small quantities, allowing sufficient time for the patient to chew and swallow, and providing liquids to keep the mouth moist and make chewing and swallowing easier. If the patient coughs or chokes frequently when swallowing, the feeding should be stopped to prevent aspiration of food. Notify your supervisor immediately. If a patient had a stroke, one side of the mouth may be affected. As you feed the patient, direct food to the unaffected side. Watch the patient's throat to check swallowing. Watch for food that may be lodged in the affected side of the mouth. If a patient chokes on food, be prepared to provide abdominal thrusts.

checkpoint

1. What do you compare a plate to for a visually impaired or blind patient?
2. How full should you fill a spoon or fork with food?

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 131 14/06/2023 10:28

3:7 ASSISTING WITH A BEDPAN/URINAL

Regular elimination of body wastes contributes to good health. Patients confined to bed must rely on the health care provider's help in meeting this important physical need. Elimination of body wastes is essential. Death will occur if wastes are not eliminated. The following terms are used in reference to elimination:

- **Urinate** (also called micturate or void) refers to emptying the bladder, which stores the liquid waste, or urine, produced by the kidney. A urinal is used by male patients when they need to urinate (**Figure 3–37**); a bedpan is used by female patients. Two main types of bedpans are the fracture, or orthopedic, bedpan and the standard bedpan.
- **Defecate** refers to having a bowel movement—the discharge of the waste through the rectum. The material is called feces (or stool).

Many patients are sensitive about using bedpans or urinals. Provide privacy by closing the door, privacy curtain, and window curtain. Make the patient as comfortable as possible during this procedure. It is also important to provide the bedpan or urinal immediately when the patient requests it. In addition, a bedpan or urinal should be offered frequently to any patient confined to bed.

Accurate observations of the frequency, amount, and appearance of urine and feces are important. Abnormalities in any of these factors may indicate disease or complications. Any abnormality must be reported immediately, and a specimen must be saved for examination.

FIGURE 3–37 A urinal should have a lid or cover.

وزارة التعليم
Ministry of Education
2016 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 132 14/06/2023 10:28

Before emptying a bedpan or urinal, it is the health care provider's responsibility to check whether specimens are needed. In addition, amounts must be measured and recorded if an intake and output record is being kept for the patient. Check with your immediate supervisor or note the physician's orders for this information.

Standard precautions must be observed when handling urine or feces. Hands must be washed frequently and gloves must be worn. Eye protection and a mask or face shield must be worn if splashing or spraying is possible while emptying the bedpan. Some health care facilities require a one-glove technique to protect the environment while assisting with bedpans or urinals (**Figure 3–38**). Two gloves are worn to remove the bedpan or urinal. The bedpan or urinal is covered and placed on top of an underpad or bed protector that has been placed on a chair. The bedpan or urinal should never be placed on the overbed table or bedside stand. One glove is removed and held in the gloved hand. The ungloved hand is used to elevate the siderails (if indicated), open doors, and turn on faucets. A paper towel can also be used with a gloved hand to prevent contact with items in the environment. It is important to protect environmental surfaces from contamination with substances on gloved hands.

Some agencies have special spray units in the bathrooms to rinse and clean bedpans and urinals (**Figure 3–39**). After rinsing, the bedpan or urinal must be disinfected. It must be used for only one patient. After the patient is discharged, it must be sterilized before being used for another patient. Many bedpans are disposable and are discarded in an infectious-waste container when the patient is discharged.

Any areas contaminated with urine or feces must be wiped with a disinfectant. In addition, patients should have the opportunity to wash their hands and receive perineal care after using bedpans or urinals. Taking proper precautions can help prevent the spread of infection.

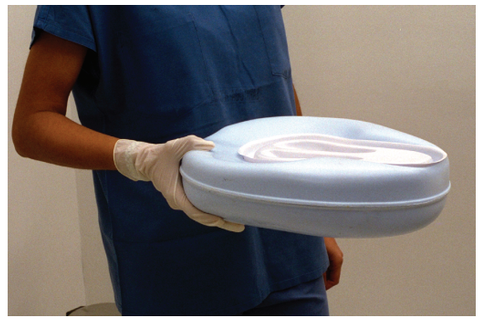

FIGURE 3–38 A one-glove technique can be used to carry a contaminated bedpan, leaving the other hand free to perform other tasks without contaminating the environment.

FIGURE 3–39 Some agencies have special spray units in the bathrooms to rinse and clean bedpans and urinals.

checkpoint

1. What is the function of the bladder?
2. What should the health care provider do before emptying a urinal?

وزارة التعليم
Ministry of Education
2026 - 1448

GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 133 14/06/2023 10:28

FIGURE 3–40A A straight catheter is inserted into the bladder to drain urine but is not left in the bladder.

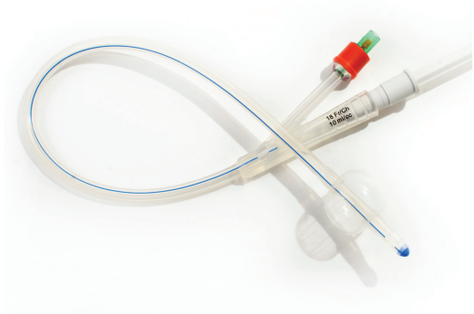

FIGURE 3–40B A Foley catheter has a small balloon on the end that is inserted into the bladder. The balloon is inflated with sterile water to hold the catheter in place.

FIGURE 3–40C If a male patient requires urinary drainage, an external catheter may be used.

3:8 PROVIDING CATHETER AND URINARY DRAINAGE UNIT CARE

Some patients are unable to urinate. In these cases, a **catheter** may be inserted into the bladder to drain the urine. The catheter is usually connected to a drainage unit to collect the urine. A catheter is a hollow tube, usually made of soft rubber or plastic. There are different kinds of catheters:

- A urethral, or straight, catheter is inserted into the bladder to drain urine but is not left in the bladder (**Figure 3–40A**). It is usually used to collect a sterile urine specimen.
- A Foley catheter (also called an indwelling, or retention, catheter) is usually used to drain the bladder over an extended period. It has a small balloon on the end that is inserted into the bladder (**Figure 3–40B**). Once the catheter is inserted, the balloon is inflated with sterile water to keep the catheter in place.
- If a male patient requires urinary drainage, an external catheter may be used (**Figure 3–40C**). These catheters eliminate the need for an internal catheter and decrease the chance of urinary infection. The external catheter is placed on the penis and attached to the urinary drainage tubing and collection bag. The catheter must be removed at least every 24 hours, and the skin must be cleansed thoroughly and checked for any signs of irritation.

Insertion of any catheter is a sterile technique performed by a nurse, physician, or other authorized person. The catheter must be kept sterile at all times.

A **urinary drainage unit**, or bag, is attached to the catheter to collect drained urine (**Figure 3–41A**). This is usually a closed unit to keep microorganisms from entering the catheter and, therefore, prevent infection. The unit consists of plastic or rubber tubing attached to the catheter and extending to a bag in which the urine is collected. Patients who are ambulatory may use a leg bag to collect the urine drained through the catheter

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 134 14/06/2023 10:28

FIGURE 3–41A The urinary-drainage bag is connected to the catheter and attached to the bed frame below the level of the bladder to collect the drained urine.

FIGURE 3–41B A leg bag may be used for ambulatory patients to collect urine drained through a catheter. It is usually attached to the leg with straps.

(**Figure 3–41B**). The leg bag is smaller than a urinary drainage bag and must be emptied more frequently, but it does allow the patient more freedom of movement. Most leg bags are held in place with Velcro straps. The bag must be positioned so there is a straight drop down from the catheter. When the patient returns to bed, the leg bag is removed and the catheter is connected to a urinary drainage bag. Most leg bags are discarded in an infectious waste bag after one use. To prevent infection, aseptic technique must be used while connecting and disconnecting the catheter from either a urinary drainage bag or a leg bag.

Careful observation of the catheter and drainage unit is required. The following should be checked frequently:

- The connection between the catheter and drainage bag is secure.
- The tubing is free from kinks or bends that stop the urine flow.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 135 14/06/2023 10:28

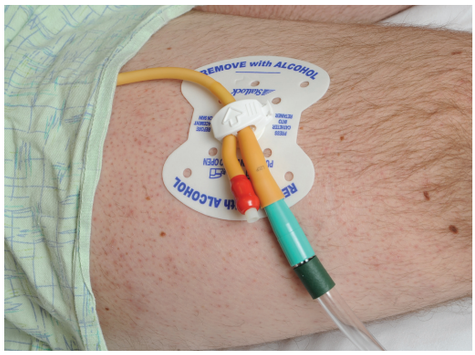

FIGURE 3–42A A catheter stabilization device can be used to secure the catheter to the leg.

FIGURE 3–42B A strap can also be used to secure the catheter to the leg.

FIGURE 3–42C The catheter may also be taped to the leg. If possible, use hypoallergenic tape.

- The drainage bag is always below the level of the bladder. If it is raised above the level of the bladder, a backflow of urine into the bladder can occur. This, in turn, can lead to infection.
- The urine is flowing freely into the drainage bag. The system usually relies on gravity for drainage, so the drainage bag should be kept low enough to make use of the force of gravity.
- The catheter is secured to the patient's leg using a catheter stabilization device (**Figure 3–42A**), a strap (**Figure 3–42B**), or tape (**Figure 3–42C**). This prevents pull on the catheter, which might dislodge it or cause irritation.
- The drainage bag is emptied frequently. Stagnant urine encourages the growth of microorganisms. The bags are usually emptied every eight hours, but they may be emptied more frequently, if required.
- The drainage bag and tubing are not lying on the floor. The drainage bag should be attached to the bed frame.
- No loops of the drainage tube are hanging below the drainage bag. Such loops interfere with the gravitational flow of urine into the bag.
- The tubing leading to the drainage bag is always above the level of urine in the bag. This prevents infection and microorganisms in the urine from traveling back up the tubing and into the patient's bladder.
- If a patient complains of burning, pain, irritation, or tenderness in the urethral area, the complaints should be reported immediately to the supervisor.

Precaution

Standard precautions must be observed at all times when handling urine. Gloves must be worn when providing catheter care, obtaining urine specimens from a urine collection port, and emptying a urinary drainage unit. Hands must be washed frequently and immediately after removing gloves. If splashing or spraying of body fluids is possible, eye protection, a mask or face shield, and a gown must be worn. Any areas contaminated with urine must be wiped with a disinfectant. Taking proper precautions helps prevent the spread of infection.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 136 14/06/2023 10:28

checkpoint

1. What is a catheter?
2. How is a Foley, or indwelling, catheter held in place?

3:9 PROVIDING OSTOMY CARE

An **ostomy** is a surgical procedure in which an opening, called a stoma, is created in the abdominal wall. This allows wastes such as urine or feces to be expelled through the opening. In most cases, an ostomy is performed because of tumors or cancer in the urinary bladder or intestine. An ostomy may also be done as a treatment for birth defects, ulcerative colitis, bowel obstruction, or injury. At times, an ostomy is permanent. At other times, an ostomy is temporary and is repaired when the injury heals or the condition necessitating the ostomy improves.
There are different types of ostomies:

- **Ureterostomy:** A ureterostomy is an opening into one of the two ureters that drain urine from the kidney to the bladder. The ureter is brought to the surface of the abdomen, and urine drains from the stoma, or opening.
- **Ileostomy:** An ileostomy is an opening into the ileum, a section of the small intestine. A loop of the ileum is brought to the surface of the abdomen. Because the entire large intestine is bypassed, the feces expelled are frequent and liquid, and contain digestive enzymes that irritate the skin.
- **Colostomy:** A colostomy is an opening into the large intestine, or colon. There are different kinds of colostomies, depending on the area of large intestine involved (**Figure 3–43**). Feces expelled through an

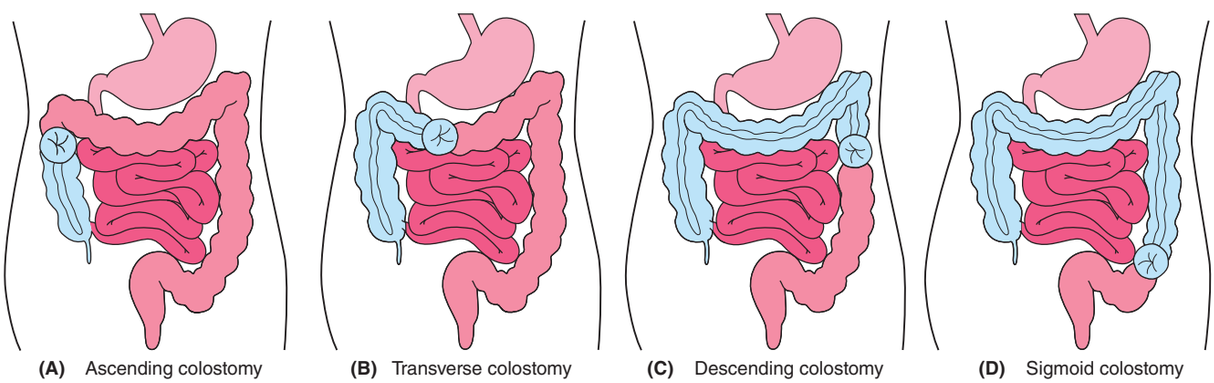

FIGURE 3–43 The type of colostomy depends on which part of the intestine is removed. Areas of intestine that remain after each type of colostomy are shown in blue.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 137 14/06/2023 10:28

ascending colostomy tend to be liquid, while feces expelled through a transverse or descending colostomy are more solid and formed. Feces expelled through a sigmoid colostomy are similar to normal feces because the digestive products have moved through most of the intestine, and water and other substances have been reabsorbed.

Most patients with ostomies wear a bag or pouch over the stoma to collect the drainage (**Figure 3–44**). The pouch is held in place with a belt or an adhesive seal. Problems that can occur include leakage, odor, and irritation of the skin surrounding the stoma. The pouch must be emptied frequently. Many pouches have areas that can be opened to allow urine or feces to drain. The drainage end of the bag is placed in a bedpan. If the patient is ambulatory, the patient can sit on the toilet and position the drainage end of the bag over the toilet. The clamp at the drainage end of the bag is opened to allow the feces or urine to drain. The drainage end is then cleaned to prevent odors, and the clamp is resealed. Some pouches are disposable and are removed and replaced. Used bags should be discarded in an infectious-waste bag.

Good stoma and skin care are essential because of irritation caused by urine or feces drainage. Skin barriers such as wafers, creams, lotions, powders, and liquid films are applied to the skin around the stoma to prevent irritation from the removal of the pouch. Only a thin layer of the barrier should be applied because too much lotion or cream may interfere with sealing the bag and irritate the skin.

When an ostomy is first performed, care is provided by a general nurse or wound care/ostomy nurse. For "older" ostomies, other trained and qualified health care providers may provide routine stoma care. It is essential to check the policy of your facility and to know your legal responsibilities before providing ostomy care. Eventually, most patients are taught to care for their own ostomies, if they are capable.

Careful observation is essential when providing care to the patient with an ostomy. The stoma is mucous membrane with no nerve endings. A normal stoma is bright to dark red and looks wet because of the exposed mucosa (**Figure 3–45**).

Precaution

Standard precautions must be observed at all times when handling urine or feces. Gloves must be worn when emptying the pouch or providing stoma care. Hands must be washed frequently, and immediately after removing gloves. Eye protection, a mask or face shield, and a gown must be worn if splashing or spraying of body fluids is possible. The pouch must be discarded in an infectious-waste bag. If a bedpan is used, it must be cleaned and disinfected. Any areas contaminated with urine or feces must be wiped with a disinfectant. Taking proper precautions can help prevent the spread of infection.

وزارة التعليم
Ministry of Education
2016 - 1438
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 138 14/06/2023 10:28

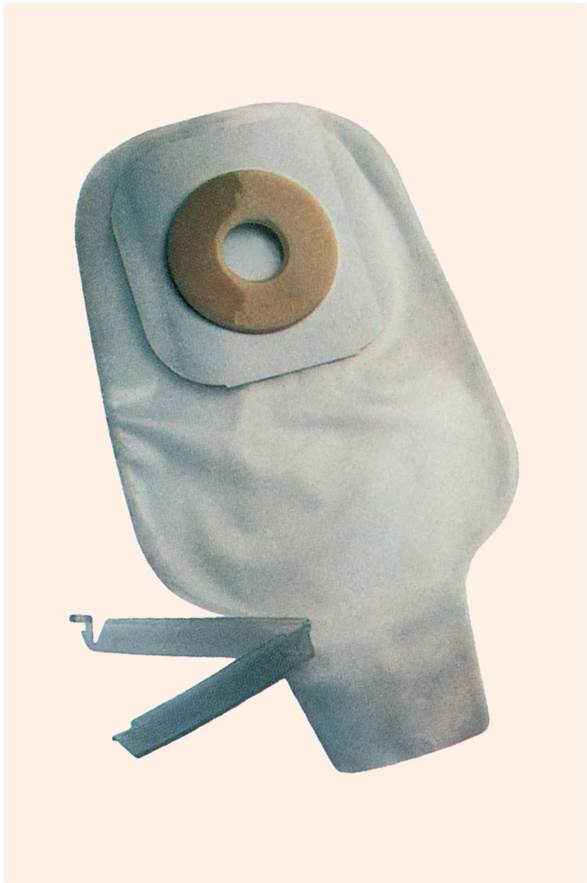

FIGURE 3–44 Most patients with ostomies wear a bag or pouch over the stoma to collect the drainage.

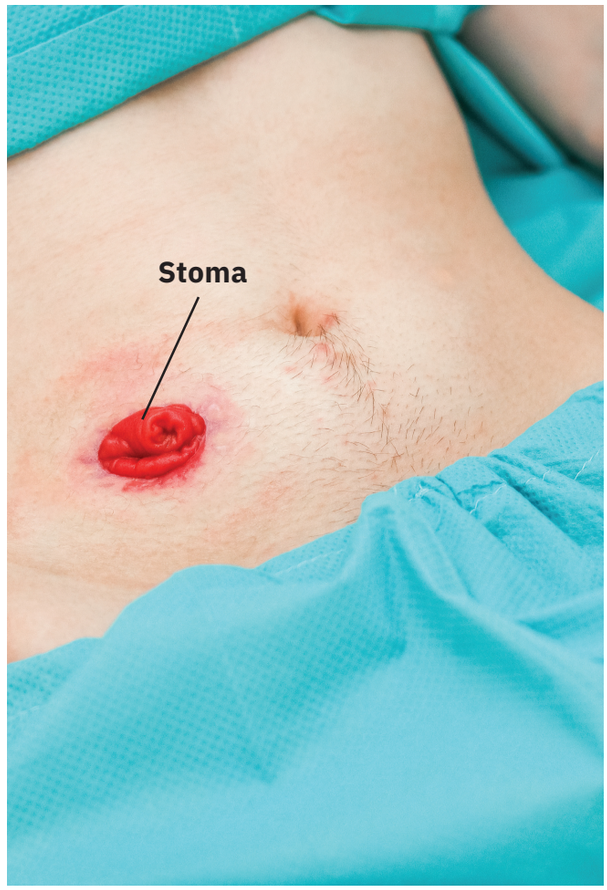

FIGURE 3–45 A normal stoma is bright to dark red and looks wet because of the exposed mucosa.

checkpoint

1. What are two reasons for creating a stoma?
2. What are two characteristics of a normal stoma?

3:10 COLLECTING SPECIMENS OF FECES/URINE

As a health care provider, you may be responsible for collecting feces and urine **specimens** (samples). Laboratory tests are performed on the specimens to aid in diagnosis of disease. For the tests to be accurate, the specimens must be collected correctly. Types of specimens include the routine urine specimen; clean-catch, or midstream-voided, specimen; catheterization for sterile urine specimen; 24-hour urine specimen; and feces specimen.

وزارة التعليم
Ministry of Education
2026 - 1448

GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 139 14/06/2023 10:28

FIGURE 3–46 Urine specimen containers should have a secure lid to prevent spillage.

FIGURE 3–47 Place the sterile lid on the container immediately after collecting the urine specimen.

ROUTINE URINE SPECIMEN

A routine urine specimen is one of the most common specimens. It is used for a variety of laboratory tests such as urinalysis (an examination of the urine to check for urinary tract infections and other diseases). A variety of specimen containers are available for collecting urine. Most containers are clear, calibrated in milliliters (ml), and disposable. The containers should have a secure lid to prevent spillage (**Figure 3–46**). Most routine urine specimens can be collected in a nonsterile container. Sterile containers are required if the urine is being cultured or tested for the presence of organisms such as bacteria.

- Usually, 120 ml of urine is sufficient for this test. If the patient is unable to void this amount, obtain what is available and send this amount to the laboratory.
- Send the specimen to the laboratory immediately. If this is not possible, refrigerate the specimen until it can be sent to the laboratory.
- If a specimen container is not available, any clean container can be used. Wash the container thoroughly with soap and water, then rinse and dry it. Patients should be cautioned against using containers that previously held medications, however, because using such containers can alter the results of the test.

CLEAN-CATCH, OR MIDSTREAM, SPECIMEN

A clean-catch (midstream) specimen is a urine specimen that is free from contamination. Because microorganisms are present on the genital area and on the specimen containers, special precautions should be used when obtaining a specimen.

- The genital area is cleansed thoroughly. Prepared wipes or clean cotton sponges or gauze squares may be used.
- After the area has been cleaned, the patient is asked to urinate. A few drops of urine are allowed to flow into the bedpan or toilet bowl. The sterile container is then used to catch the urine that follows. The last few drops of urine should be discarded. In this way, the first and last part of the specimen are discarded, and only the middle, or midstream, urine is collected. The sterile lid should be placed on the container immediately to prevent contamination (**Figure 3–47**).

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 140 14/06/2023 10:28

CATHETERIZATION FOR STERILE URINE SPECIMEN

It is sometimes necessary to obtain a sterile urine specimen from a patient. To do this, the patient is catheterized. A narrow, hollow, sterile tube is inserted directly into the bladder. Urine from the tube is then placed in a sterile urine-specimen container.

24-HOUR URINE SPECIMEN

Special tests require a 24-hour urine specimen. This means that all the urine produced by the patient during a 24-hour period must be saved. This urine is used to check kidney function (**Figure 3–48**).

FIGURE 3–48 A 24-hour urine specimen collector.

FECES SPECIMEN

A feces specimen is examined by the laboratory, usually to check for ova and parasites (eggs and worms). Feces can also be examined for the presence of fats, microorganisms, occult blood, and other abnormal substances. A new feces test checks for a gene or a DNA mutation that is usually faulty in the earliest stages of colon cancer. This test can help physicians detect colon cancer at its earliest stages, when it can be treated much more effectively.

FIGURE 3–49 All urine or feces specimens must be placed in protective biohazard bags before being transported to the laboratory.

LABELING

All specimens must be labeled correctly, including the kind of specimen (urine or feces), the test ordered, the patient's name, room number or identification number, the date and time, and the physician's name. It is best to label the specimen container instead of the lid because errors could occur if the lid is misplaced. All required information must also be printed on the correct lab requisition form. A laboratory requisition must be sent with the labeled specimen. Health care agencies with electronic records use computer-generated labels for the specimen container and laboratory requisition form.

Precaution

Standard precautions must be observed when obtaining and handling urine or feces specimens. Gloves must be worn. Hands must be washed frequently and are always washed immediately after removing gloves. Eye protection, a

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 141 14/06/2023 10:28

mask or face shield, and a gown must be worn if splashing or spraying of body fluids is possible. Any areas contaminated with urine or feces must be wiped with a disinfectant. To avoid contamination from spills, all urine or feces specimens are placed in special biohazard bags before being transported to the laboratory for testing (**Figure 3–49**). Taking proper precautions can help prevent the spread of infection.

checkpoint

1. When collecting a routine urine specimen, if a specimen cup is not available, what can be used?
2. If a urine specimen cannot be sent to the laboratory right away, how should it be stored?

3:11 ADMINISTERING PREOPERATIVE AND POSTOPERATIVE CARE

Providing care to patients scheduled for surgery may be one of your responsibilities as a health care team member. Surgical care is divided into three phases:

- **Preoperative care:** care provided before the surgery.
- **Operative (or intraoperative) care:** care provided during the surgery.
- **Postoperative care:** care provided following the surgery.

Unless you work in an operating room, the nurse assistant's major responsibilities will likely involve the preoperative and postoperative phases.

Comm

Every patient scheduled for surgery, no matter how minor, has some fears. Fears regarding disfigurement, pain, loss of control, the unknown, length of recovery time, costs and financial problems, and a poor diagnosis after surgery create concerns for many patients. It is important to provide emotional support in addition to physical care. Answer all questions you can to the best of your ability. However, specific questions about the surgery, outcome, or anesthesia should be referred to the physician or supervisor.

PREOPERATIVE CARE

Preoperative care involves many aspects of care. The preparation is ordered by the physician, depending on the type of operation. Possible aspects of preparation are:

وزارة التعليم
Ministry of Education
2016 - 1438
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 142 14/06/2023 10:28

- **Operative permit:** This is a form signed by the patient to give permission (consent) for the anesthesia and surgery. If the patient is unable to sign due to a severe illness or confusion, the next of kin or an individual with a power of attorney can sign for them. Signatures must be witnessed by a legally authorized individual (**Figure 3–50**).
- **Laboratory tests** may include blood tests, urine tests, chest or other x-rays, ECG, and special tests ordered by the physician.
- **Baths** may be given both the night before surgery and the morning of surgery. The purpose is to remove as many micro-organisms as possible in an effort to prevent infections. Some surgeries require a bath using an antiseptic skin cleanser the night before and the morning of the surgery. The antiseptic skin cleanser removes bacteria from the skin to prevent it from entering the surgical incision. Baths also give the patient a chance to talk and relieve some anxiety.
- **Vital signs** are taken and recorded (**Figure 3–51**). They are used as a standard to check vital signs during and after the surgery.
- **Nil by mouth:** The patient is allowed nothing by mouth for 8–12 hours before the surgery. The order usually starts at 12:00 am (midnight). A sign is usually placed on the patient's bed. Water is removed from the area at the appointed time.
- **Valuables:** All the patient's valuables, including money and jewelry, should be placed in a hospital safe or with security to prevent loss. A patient is sometimes allowed to wear a wedding ring. However, it must be taped or tied to the finger to prevent loss.
- **Remove prosthetics:** All artificial parts should be removed. This includes dentures, contact lenses or glasses, artificial limbs, and hearing aids.

FIGURE 3–50 Explain the procedure and make sure that the operative permit is signed. Remember that only authorized individuals can witness the signature.

FIGURE 3–51 Vital signs must be taken and recorded as part of preoperative care.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 143 14/06/2023 10:28

- **Remove cosmetics:** Nail polish, make-up, hair pins, and wigs are all removed before surgery. The presence of cosmetics can mask skin or nail bed color changes.
- **Clothing:** Usually, the patient must remove all clothing, including undergarments. A hospital gown is placed on the patient. Most agencies also place a surgical cap on the patient to cover the hair.
-
Comm
Name band: Before surgery, the patient's name band or identification band should be checked for accurate information. Because the patient frequently is unconscious during surgery, the name band is the only method of identifying the patient.
- **Voiding:** To make sure the bladder is empty during surgery, the patient should void immediately before being brought to the operating room. For some surgeries, a catheter is used to constantly drain all urine. Only a legally qualified person should insert the catheter.
- **Surgical checklist:** Most agencies use surgical checklists to track most of the previously noted preparation items. As these items are completed, they are checked off the checklist. This provides a method for determining that the patient has been properly prepared for surgery. The checklist is usually attached to the patient's chart or entered into the computerized record.

Frequently, patients are not admitted to the hospital or surgical clinic until the morning of the surgery. In this case, many of the tests such as blood work, radiographs, and ECG are performed on an outpatient basis before the day of surgery.

ANESTHESIA

Anesthesia is prevention of pain by way of loss of sensation. Medication is administered by an anesthesiologist, nurse anesthetist, or physician. The type of anesthetic used and the method of administration depends on the type of surgery, the length of time needed, and the physical condition of the patient. Three main kinds are:

- **General anesthesia:** Medication is given intravenously or is inhaled through a mask. This causes unconsciousness, which continues throughout the surgery. A common postoperative problem is nausea or vomiting.
- **Local anesthesia:** Medication is injected into the area around the operative site to stop the sensation of pain. The patient is awake when local anesthesia is used.

وزارة التعليم
Ministry of Education
2016 - 1438
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 144 14/06/2023 10:28

- **Spinal anesthesia:** Medication is injected into the spinal canal and causes loss of sensation (feeling) in all areas below the injection. This is often used for abdominal surgery because it produces good muscle relaxation. Patients must be told that they will not have any feeling or movement in the legs for a period of time. Patients sometimes complain of headaches after this type of anesthesia.

POSTOPERATIVE CARE

While the patient is in surgery, the postoperative room or bed unit is prepared in such a way that all necessary equipment will be available when the patient returns from surgery. A recovery bed is made, an intravenous (IV) pole or stand, and equipment for taking vital signs is put in place, and an emesis basin and tissues are placed at the bedside. Necessary special equipment, such as a suction machine for drainage tubes or equipment for administering oxygen, is also placed in the unit. All unnecessary supplies or equipment are removed from the area. For example, the water pitcher and cup are removed until postoperative orders state that the patient can have fluids.

Postoperative care is an important aspect of surgical care. Some of the factors to be considered in immediate postoperative care are:

- **Vital signs:** These must be checked frequently and as ordered. They are sometimes taken every 15 minutes until the patient is stable. A sudden drop in blood pressure or change in pulse rate or character are often the first signs of hemorrhage or shock, so any changes or abnormal readings must be reported immediately.
- **Dressings:** These must be checked frequently (**Figure 3–52**). The color, amount, and type of drainage must be noted. Any unusual observations should be reported immediately.
- **IV:** The flow rate and injection site must be checked only by an authorized individual.

FIGURE 3–52 Dressings must be checked frequently after surgery.

FIGURE 3–53 A pillow across the abdomen provides support when the patient is coughing and deep-breathing.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 145 14/06/2023 10:28

- **Level of pain:** An assessment must be made of the amount of pain a patient is experiencing. Frequently, patients are asked to describe pain on a scale of 1 to 10, with 1 being mild pain and 10 being extreme pain. Patient-controlled analgesics are often used to control pain. An analgesic pump is attached to an IV line. The patient is taught to push a button when pain is felt. The pump delivers a specific dose of pain medication directly into the bloodstream to provide immediate relief. The patient cannot overdose on the medication because the pump locks out delivery of medication for a set period. A change in position can also help alleviate pain. If patients do not seem to be able to get pain relief, this should be reported immediately.
- **Observations:** Restlessness, color and temperature of skin, nausea or vomiting, and similar observations should be noted and reported.
- **Position:** The patient's position must be changed when possible. Be sure you are aware of all movement restrictions. Some operations limit movement and positioning. Turn or move patients only after obtaining correct authorization.
- **Cough and deep breaths:** Most patients need to be encouraged to cough and breathe deeply after general anesthesia (**Figure 3–53**). This exercise helps remove mucus from the lungs and respiratory tract and helps prevent pneumonia and other lung disorders.
- **Tubes:** Surgical patients frequently have drainage tubes in place. The tubes are connected to drainage bottles or special drainage collectors. If the tubes are not draining, if they are clamped, if the drainage solution changes or seems unusual, if a tube is not connected to a drainage source, or if any unusual observations are noted, they should be reported immediately. Care must also be taken when turning or moving the patient to make sure that the tubes are not disconnected, twisted, or pulled out.
- **Binders** are special devices that are usually made of heavy cotton or flannelette with elastic sides or supports. They are applied to various parts of the body, but mainly to the abdomen, back, and breasts. Functions of binders include the following:
  - Provide support and relief from pain following surgery.
  - Hold dressings in place.
  - Limit motion.
  - Apply pressure to specific body parts.

Binders must be applied smoothly to prevent pressure areas, which can lead to the formation of pressure ulcers. Binders should fit snugly for support but not be so tight as to cause discomfort. No wrinkles or creases should be present. The type used most frequently is a straight binder. It can be applied to the abdomen, back, or rib cage. Straight binders are secured

وزارة التعليم
Ministry of Education
2016 - 1438
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 146 14/06/2023 10:28

using Velcro tabs. Binders are applied from bottom to top for optimal support. In this way, organs can be supported correctly. Circulation and breathing should always be checked after binders are applied. A binder that is too tight can cause severe complications. In addition, binders should be removed at intervals, and skin care should be provided to the skin under the binder.

- **Surgical (elastic) hose**, also called support or compression hose, may be ordered to support the veins of the legs and increase circulation. These hose help prevent formation of blood clots in the legs. The hose must be applied correctly. If they are applied too tightly, they can interfere with circulation.
- **Compression stockings**, also called sequential compression devices, are attached to a pump that continually inflates and deflates the hose. They are frequently used to stimulate circulation in the legs by mimicking the action of the leg muscles on blood vessels (**Figure 3–54**). They increase the venous blood flow and prevent the formation of blood clots, or venous thromboembolism (VTE).
- **Montgomery straps** are special adhesive strips that are applied when dressings must be changed frequently at the surgical site (**Figure 3–55**). The skin around the surgical site is cleaned thoroughly. A skin barrier, such as a liquid or paste, is applied to the skin to protect it from being irritated by the tape. The Montgomery straps are then applied on either side of the surgical site. The centers of the straps are nonadhesive and tied together. To change dressings, the straps are untied, the dressings are changed, and the straps are then tied in place on top of the dressings. This eliminates the need to remove and reapply adhesive tape during each dressing change.

Precaution

It is essential that the nurse assistant follow all standard precautions whenever contact with blood or body fluids is possible. This helps prevent the spread of infection, including infection in the surgical patient after surgery. The nurse assistant must know and understand all aspects of care that have been ordered to care for the patient properly. Good operative care can mean a faster recovery with fewer complications for the patient.

FIGURE 3–54 Compression stockings continually inflate and deflate to stimulate circulation in the legs.

FIGURE 3–55 Montgomery straps are special adhesive strips that are applied when dressings must be changed frequently at the surgical site.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 147 14/06/2023 10:28

checkpoint

1. What are the three phases of surgical care?
2. How frequently are vital signs taken after surgery?

3:12 ADMINISTERING OXYGEN

The blood must have oxygen. The blood's supply of oxygen is normally obtained from the air, which is approximately 23% oxygen. As a result of accident, injury, or respiratory disease, however, the body may be unable to take in enough oxygen or to use oxygen effectively. In such cases, oxygen can be given to the patient by various means.

The signs of an oxygen shortage are rapid and shallow respirations, rapid pulse, restlessness, anxiety, and cyanosis. A deficiency of oxygen is called hypoxia. Lack of oxygen can cause brain damage in 4–6 minutes.

A physician's order is usually required for the administration of oxygen. The order will include the method of administration and the concentration to be given. In cases of extreme emergency, oxygen can be started with standard concentrations, and the physician notified as soon as possible. Most rescue teams, ambulance personnel, and others involved in emergency work follow specific orders regarding oxygen administration.

METHODS OF OXYGEN ADMINISTRATION

Oxygen is usually administered by one of the following methods:

- **Mask (Figure 3–56A):** The mask should cover the nose and mouth. It should fit snugly to prevent loss of oxygen, but it should not be so tight as to cause discomfort to the patient. Oxygen by mask is the method of administration used most frequently by rescue personnel. It provides the highest concentration of oxygen.
  -
    Comm
    Some patients are frightened by the mask. A careful explanation of its purpose along with constant reassurance are necessary.

FIGURE 3–56A The oxygen mask covers the nose and mouth and provides a high concentration of oxygen.

FIGURE 3–56B When a nasal cannula is used to provide oxygen, the patient must breathe through the nose.

وزارة التعليم
Ministry of Education
2016 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 148 14/06/2023 10:28

- The rate of flow by mask is usually 6–10 liters per minute (lpm). Masks should never be used with flow rates less than 5 liters per minute because the patient will rebreathe carbon dioxide and will feel smothered.

- **Nasal cannula** (**Figure 3–56B**)**:** The cannula consists of two small, curved, plastic tubes, which are placed one in each nostril. The other end of the cannula is attached to an oxygen tank or unit. The patient must be instructed to breathe through the nose. If the patient opens the mouth to breathe, the concentration of oxygen is reduced. The rate of flow by cannula is usually 2–6 liters per minute.

- **Tent:** The tent surrounds the patient with a high concentration of oxygen. It is usually used for infants and small children. Oxygen and humidity are provided. A common example is a croupette used with infants and small children. The flow rate is usually 10–12 liters per minute.

OXYGEN DELIVERY SYSTEMS

Different systems can be used to provide oxygen.

- Most hospitals *pipe in oxygen* through the wall. Some health care facilities, such as long-term care facilities, medical offices, or dental offices, may also pipe in oxygen. A flow meter for the oxygen is plugged into an adaptor in the wall (**Figure 3–57A**). When the flow meter is turned on, oxygen is delivered. Oxygen is color-coded with a green label. The wall adaptor usually has a green label with the word 'oxygen' or the symbol "O_2".

- *Portable oxygen cylinders* are used while transporting patients, in emergencies, in some long-term care facilities, and in home situations (**Figure 3–57B**).

- Health care facilities, such as long-term care facilities, medical offices, or dental offices, often use *oxygen cylinders*, or *oxygen concentrators*. An oxygen concentrator removes impurities and other gases from room air to concentrate oxygen in the unit (**Figure 3–57C**). The oxygen concentrator cannot be used with oxygen masks because it provides only low liter flow rates, usually 2–4 liters per minute. A filter on the oxygen concentrator must be cleaned frequently by washing it with warm soapy water, rinsing it, and squeezing it dry before replacing it in the unit.

- Patients can fill small, lightweight portable containers with liquid oxygen that can be carried like a shoulder bag. With a light, concentrated supply of oxygen that does not rely on an electrical source or batteries, a patient can have mobility for ten or more hours (**Figure 3–57D**).

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 149 14/06/2023 10:28

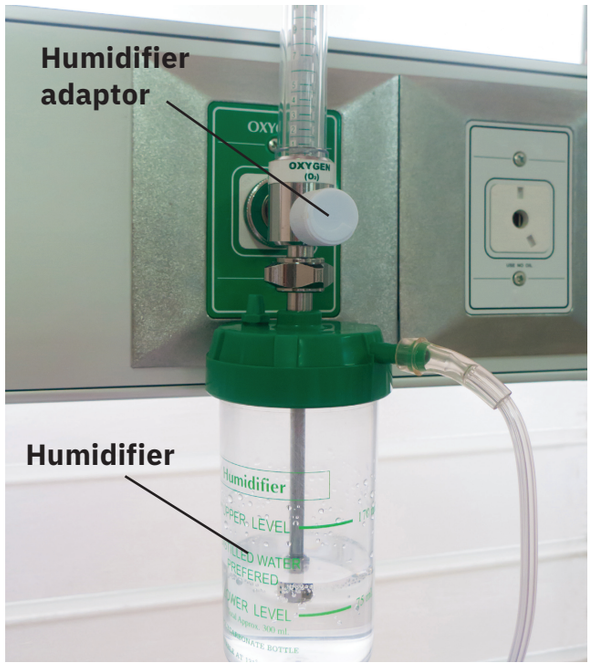

FIGURE 3–57A When oxygen is piped through a wall, the flow meter is plugged into a wall adaptor. A humidifier is used to moisturize the oxygen.

FIGURE 3–57B Portable oxygen cylinders can be used to provide oxygen while transporting patients, in emergencies, in long-term care facilities, and in home situations.

FIGURE 3–57C Oxygen concentrators remove impurities and other gases from room air to concentrate oxygen in the unit.

FIGURE 3–57D Liquid oxygen is available in smaller containers and delivers a high concentration of oxygen.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 150 14/06/2023 10:29

Science

Pure oxygen is very drying and can damage or irritate mucous membranes. The current recommendation is that any oxygen flow rate above 4 liters per minute should be moisturized by passing it through water before it is administered to the patient. A *humidifier* is used to moisturize oxygen (see **Figure 3–57A**).

SAFETY PRECAUTIONS

Safety

Safety precautions must be observed when oxygen is in use. Although oxygen does not explode, burning is more rapid and intense in the presence of oxygen. Flammable materials (those that burn) will burn much more rapidly in the presence of oxygen. The following precautions should be taken whenever oxygen is in use:

- Burning candles and the use of open flames are prohibited when oxygen is in use. Most health care facilities prohibit smoking in all areas. In home situations or any areas where smoking may occur, a warning sign reading, for example, "No Smoking—Oxygen" is placed on the door, in the patient's room, on the bed, or on the wall nearby. Warning labels are also sometimes placed on tanks used by emergency rescue personnel.
- Comm

  The sign is not enough. The patient must be cautioned against smoking. Observers at the scene of an accident or emergency situation must also be told to avoid smoking.
- The use of electrically operated equipment, which could cause sparks, should be avoided.
- Flammable liquids, such as nail polish remover or adhesive tape remover, should never be used while oxygen is in use. Alcohol-based aftershave lotions, hairspray, perfumes, and nonapproved lip balms should not be used for patient care.
- Cotton blankets should be used in place of wool or nylon. In addition, all bed linen, bedspreads, and gowns should be cotton instead of synthetic materials. Cotton is static-free, and its use decreases the danger of static electricity.
- Frequent inspections must be made of any area where oxygen is in use. Sources of sparks or static electricity should be removed.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 151 14/06/2023 10:29

FIGURE 3–58 A pulse oximeter may be used to measure the level of oxygen in arterial blood.

PULSE OXIMETERS

Technology

Pulse oximeters may be used to monitor the patient who is receiving oxygen (**Figure 3–58**). An oximeter measures the level of oxygen in arterial blood. A photodetector probe is clipped onto the patient's finger, toe, or earlobe. The percentage of oxygen in the arterial blood is displayed on the monitor screen of the oximeter. A normal range of blood oxygen saturation level is 95–100%. Levels below 90% are considered to be *hypoxia*, a deficiency of oxygen reaching the tissues. If the oxygen level falls below the minimum percentage programmed into the oximeter, an alarm will sound.

The accuracy of the device can be affected by many things, such nail polish, having cold fingers, poor perfusion, movement, skin colour, and geographic altitude. Anything that blocks light or affects blood flow can cause the sensor to give an incorrect oxygen saturation level.

Licensed personnel are responsible for programming and monitoring the oximeter. The health care assistant should make sure that the probe is not disturbed and should notify a supervisor if the alarm sounds.

PRECAUTIONS

Precaution

A patient who is receiving oxygen must be checked frequently.

- Quality of respirations should be noted.
- Mouth and nose care must be provided if a mask or cannula is used. The oxygen flow rate should be checked.
- Watch to make sure that the patient and visitors do not change the liter flow.

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Ministry of Education
2026 - 1448

- If a humidifier is used, the water level must be checked, and the humidifier replaced as indicated. Safety precautions must be checked frequently.
- In many facilities, oxygen administration is the responsibility of the respiratory therapy department. However, the health care team member, who is with the patient more frequently, should always be aware of safety precautions and check patients carefully. Any abnormal observations should be reported immediately.

checkpoint

1. List two methods used to administer oxygen.
2. What is used to moisturize oxygen?

Today's Research — Tomorrow's Health Care

Gene Therapy That Cures Cancer?

Hepatocellular carcinoma (liver cancer) kills many people each year. Researchers are experimenting with many different treatments for liver cancer. One treatment involves the use of gene therapy. Every human has between 50,000 and 100,000 different genes. These genes determine what a person inherits, such as hair and eye color. Genes also carry instructions that tell cells to perform certain functions, such as when to reproduce and grow.

Initially, scientists researching the spread of liver cancer to the colon and rectum identified a gene called p53. This gene codes for a protein that is present in normal cells and regulates cell growth. In many types of cancer, the gene is missing or mutated (changed), allowing uncontrolled growth of the cancer cells. Another group of researchers in Japan studied hepatitis C carriers and discovered that the presence of a particular gene roughly doubles the chances that a hepatitis C carrier will develop liver cancer. Scientists also identified genes called FGF-19 and FGFR4, which become active in liver, breast, and pancreatic cancer, causing healthy cells to become cancerous. However, these scientists also found that when an experimental antibody inhibitor was applied, the gene's activity stopped, preventing the development of cancerous cells. Currently, several FGFR4 inhibitors are in initial trial studies.

Other scientists found a gene called STAT3 that seems to protect liver cancer cells from the effects of chemotherapy (treatment with cancer drugs). Research to find a substance that blocks the action of this gene so chemotherapy is more effective has developed several potential inhibitors for STAT3. One of the most promising inhibitors is napabucasin because it seems to be efficient at blocking the action of STAT3 and allowing chemotherapy to be more effective. If scientists can find ways to replace missing genes or block the actions of genes that are causing cells to become malignant, they will be able to stop or decrease the growth of cancer so other treatments will be more effective.

One major problem of gene therapy is the way that the gene has to be inserted into a person's cell. Scientists cannot simply inject genes into cells. They must be transported into the cell by using a carrier called a vector. The most common vectors used are retroviruses. Scientists inactivate the retroviruses to keep them from causing disease and then use them to carry the gene into cells. The problems that occur with this method are that the genes might alter, or change, other normal cells, or that the new gene might be inserted into the wrong location, causing additional damage to the body. For these reasons, scientists must identify easier and better ways to deliver genes to body cells. Scientists throughout the world are trying to solve these problems. If they are successful, many people with cancer may be cured.

Case Study Investigation Conclusion

What skills do you think Khalid and Basmah will need to have to deliver superior care to their patients? What skills involve asking each other for help? What communication skills will they need to use?

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CHAPTER 3 SUMMARY

- Many nurse assistant skills are directed toward providing quality personal care for the patient. Examples include bathing, caring for hair and nails, gowning or dressing the patient, giving back rubs, providing oral hygiene, shaving, feeding, assisting with bedpans or urinals, and bedmaking. It is essential that the nurse assistant learn and follow correct procedures to provide for the safety, comfort, and privacy of the patient.
- Other nurse assistant skills include positioning, turning, moving, and transferring patients. During any move or transfer, the use of correct body mechanics is essential.
- Nurse assistant skills are required for other special procedures, such as measuring intake and output, collecting feces and urine specimens, assisting the surgical patient, administering oxygen, providing catheter care, and applying surgical hose.
- It is important to make careful observations of the patient while providing care, and to record or report these observations correctly. In this way, you will use nurse assistant skills to become an important member of the health care team.

Mini Case 3:1 A Patient With a Pressure Ulcer

Afnan is a nurse assistant in her local hospital. She is introduced to Haya, an elderly woman who has just been admitted with an injured leg. Haya tells Afnan that she did not really want to come to hospital as her family was taking good care of her at home. However, when she examines Haya, Afnan discovers a stage II pressure ulcer on her hip. Haya admits that her hip has been "a bit sore" recently.

analysis

1. What should Afnan do first?

2. How can Haya's pressure ulcer be treated?

3. What advice could Afnan give to Haya's family on how to avoid further pressure ulcers when Haya is discharged home?

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Mini Case 3:2 The "Thinking Nurse"

Ayisha works on a medical ward at the local hospital. One of the patients she has been assigned to take care of is Mohammed, a 72-year-old man newly diagnosed with diabetes (a condition in which the body does not produce enough insulin to control blood sugar levels). Part of Ayisha's process of preparing to care for her patients is to review their charts for any new physician orders. She notes that the doctor had attended during the previous evening and had ordered the patient's blood glucose to be checked at 8 a.m. According to the results, insulin is to be given. (The higher the level of blood glucose, the greater the amount of insulin that is given.) Ayisha is a "thinking nurse" and starts to question whether this is an appropriate order. She realizes that breakfast trays arrive at 7:30 a.m. on her floor and that Mohammed will already have eaten when she checks his insulin level at 8 a.m. She knows that, after eating, a person's blood glucose normally increases for a few hours. This is why blood glucose tests are usually ordered when the patient has not eaten for a number of hours. Ayisha reasons that if she calculates the amount of insulin based on the temporarily elevated blood glucose levels, Mohammed will receive too much insulin and may have a negative reaction. Ayisha calls the doctor to clarify the order. The doctor states that he believed the breakfast trays did not arrive until 8:30 a.m. He thanks Ayisha for catching the error and changes the order.

analysis

1. What might have happened if Ayisha had simply performed the blood glucose test exactly as ordered?

2. Do you think Ayisha should have been considered responsible for the error if she had followed the orders exactly?

3. Review the "What? When? Where? Why? Who? and How?" questions in relation to this situation. Give examples of questions that Ayisha may have asked herself.

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Mini Case 3:3 The Busy Nurse

Maryam has been admitted for exploratory surgery on a painful knee joint. You are the nurse looking after her before and after the operation. Maryam is worried about what is going to happen and how much pain she will be in afterwards. You are very busy as you have several patients to get ready for surgery that morning, but Maryam is reluctant to let you go.

analysis

1. How can you help Maryam to be less fearful?

2. How do you ensure that all your patients are cared for to the best of your ability?

3. What should you tell Maryam about her surgery? If she has specific questions about the surgery, what should you do?

REVIEW QUESTIONS

1. List three procedures that must be performed while admitting a patient to a hospital or long-term care facility.

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2. Describe six ways of preventing pressure ulcers.

3. What might a patient experience when changing position from lying to sitting or standing? What should you do if this happens?

4. What are the two types of catheter? Why are they used?

5. Differentiate between a routine, clean-catch (midstream), sterile, and 24-hour urine specimen.

6. Why are feces tested?

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7. Define each of the following: colostomy, pressure ulcer, edema, nasogastric tube, dysphagia.

8. Identify five specific aspects of care for:

a. Preoperative patients.

b. Postoperative patients.

9. Name three systems for administering oxygen.

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10. Explain five standard precautions that must be observed while handling urine or feces.

CRITICAL THINKING

1. a. Identify six observations that might be indicative of a medical problem.

b. Why is it important to constantly observe a patient while providing personal care?

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2. a. Describe four ways to prevent pressure sores or contractures from developing.

b. Why is it easier to prevent a pressure ulcer or contracture than it is to treat them?

3. When transferring a patient to a stretcher or using a mechanical lift, why is it especially important to cooperate and communicate as a team?

ACTIVITIES

1. In pairs, write and illustrate a leaflet for patients explaining postoperative care.

2. With a partner, sketch the perfect hospital room that is ready for a new admission. Create a script of a caring nurse assistant helping a new patient feel comfortable.

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Part 2

Chapter 4 **Medical Assistant Skills**

Chapter 5 **Business and Accounting Skills**

Chapter 6 **Professional Development and Lifelong Learning**

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Link to digital lesson

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CHAPTER

4

MEDICAL ASSISTANT SKILLS

Case Study Investigation

Abdullah and Noura are medical assistants at a medical clinic. The team of doctors conduct many examinations, immunizations, procedures, and medication refills. Both Noura and Abdullah like to be busy and assist with a variety of patient needs. Noura has been at the clinic for 15 years and Abdullah just graduated from medical assisting training last year. Noura is glad to work as a team with Abdullah to deliver excellent care for clinic patients. At the end of this chapter, you will be asked what kind of skills Abdullah and Noura will need to know so that they can assist the doctors in providing competent and caring support for clinic patients.

LEARNING OBJECTIVES

After completing this chapter, you should be able to:

- Measure and record height and weight.
- Position and properly drape a patient in horizontal recumbent, prone, Sims', knee–chest, Fowler's, lithotomy, dorsal recumbent, Trendelenburg, and jackknife positions.
- Use a visual acuity chart to screen for vision problems.
- Prepare for and assist with a general physical examination.
- Identify and describe instruments/equipment used in minor surgery.
- Identify and describe instruments/equipment used in suture removal.
- Record and mount an electrocardiogram (ECG).
- Use reputable sources to find basic information about various drugs.
- Identify methods of administering medications and safety rules that must be observed.

KEY TERMS

auscultation
dorsal recumbent
drapes
forceps
Fowler's
hemostat
horizontal recumbent (supine)
hyperopia
jackknife (proctologic)
knee–chest
lithotomy
myopia
node
observation
palpation
percussion
prone
retractor
scalpel
Sims' (left lateral)
speculum
stethoscope
sutures
Trendelenburg
visual acuity

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4:1 MEASURING/RECORDING HEIGHT, WEIGHT, AND HEAD CIRCUMFERENCE

Height and weight measurements are a part of the general physical examination in a physician's office. They are also usually done routinely when a patient is admitted to a hospital, long-term care facility, or other health care agency. In addition, these measurements provide necessary information in performing and evaluating certain laboratory tests and in calculating dosages of certain medications.

- Height and weight measurements are taken in many health care fields and are used to determine whether a patient is overweight or underweight. Either of these conditions can indicate disease.
- Height and weight charts can be used to determine whether a child is growing well and whether they are underweight or overweight.
- Height and weight measurements must be accurate. Always recheck your calculations.
- The height, weight, head circumference, and, at times, chest circumference measurements of infants and toddlers is monitored frequently because growth is rapid. Infants are checked regularly to detect any changes that may indicate problems with growth and development (**Figure 4–1**). The measurements are recorded on graphs of weight for age (**Figures 4–2A** and **4–2B**), height for age (**Figures 4–2C** and **4–2D**), head circumference for age (**Figures 4–2E** and **4–2F**), and weight for height (**Figures 4–2G** and **4–2H**) for boys and girls. Different graphs are needed for boys and girls as they grow in different patterns and at different rates. The graphed information allows the physician to check the child's growth and compare it with the average percentiles of other children the same age. Abnormal growth patterns may indicate nutritional deficiencies or genetic diseases.

FIGURE 4–1 Infants are checked regularly to detect any changes that may indicate problems with growth and development.

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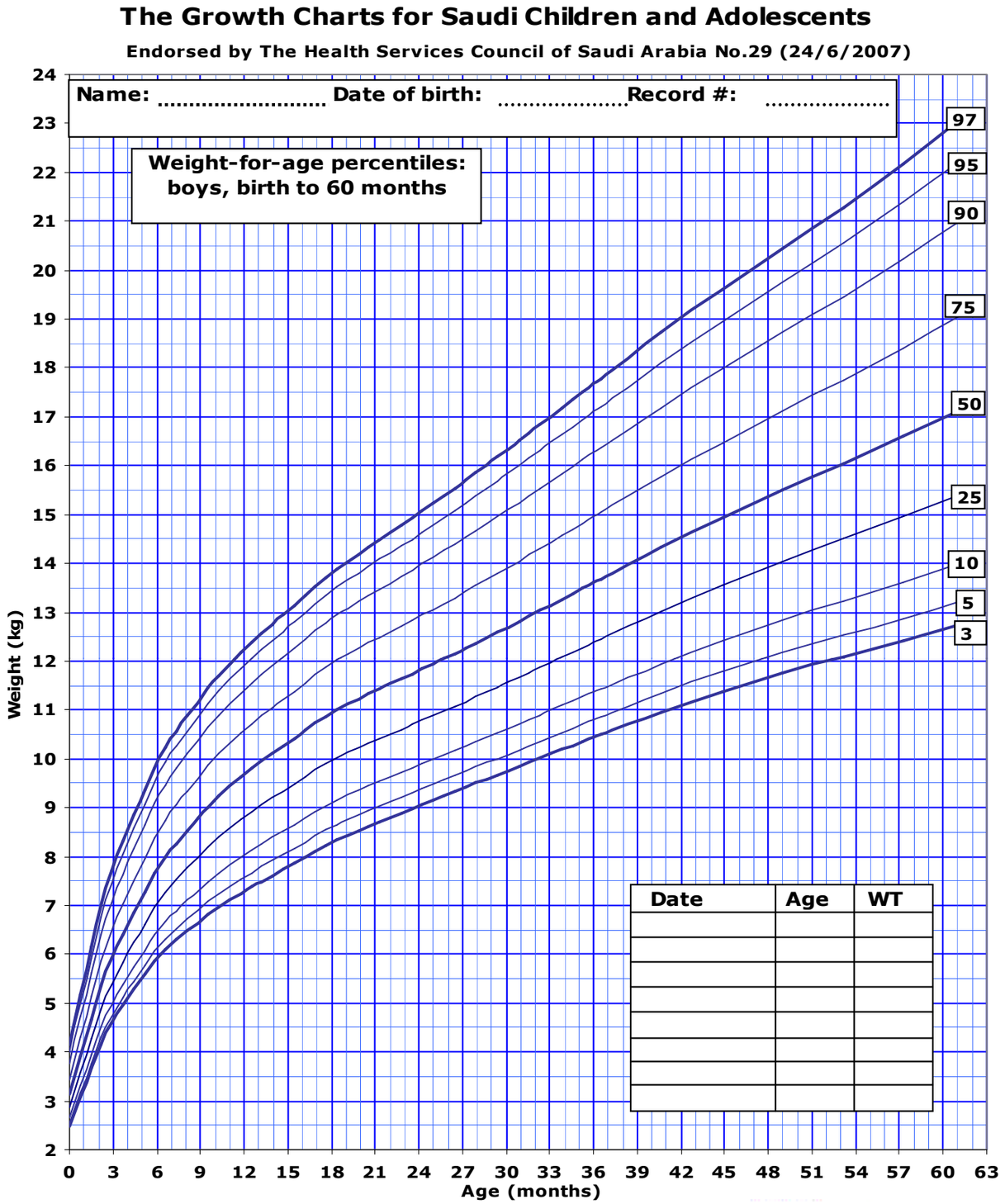

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NB: The age is based on the Gregorian calendar.

FIGURE 4–2A Weight for age percentiles: boys, birth to 60 months.

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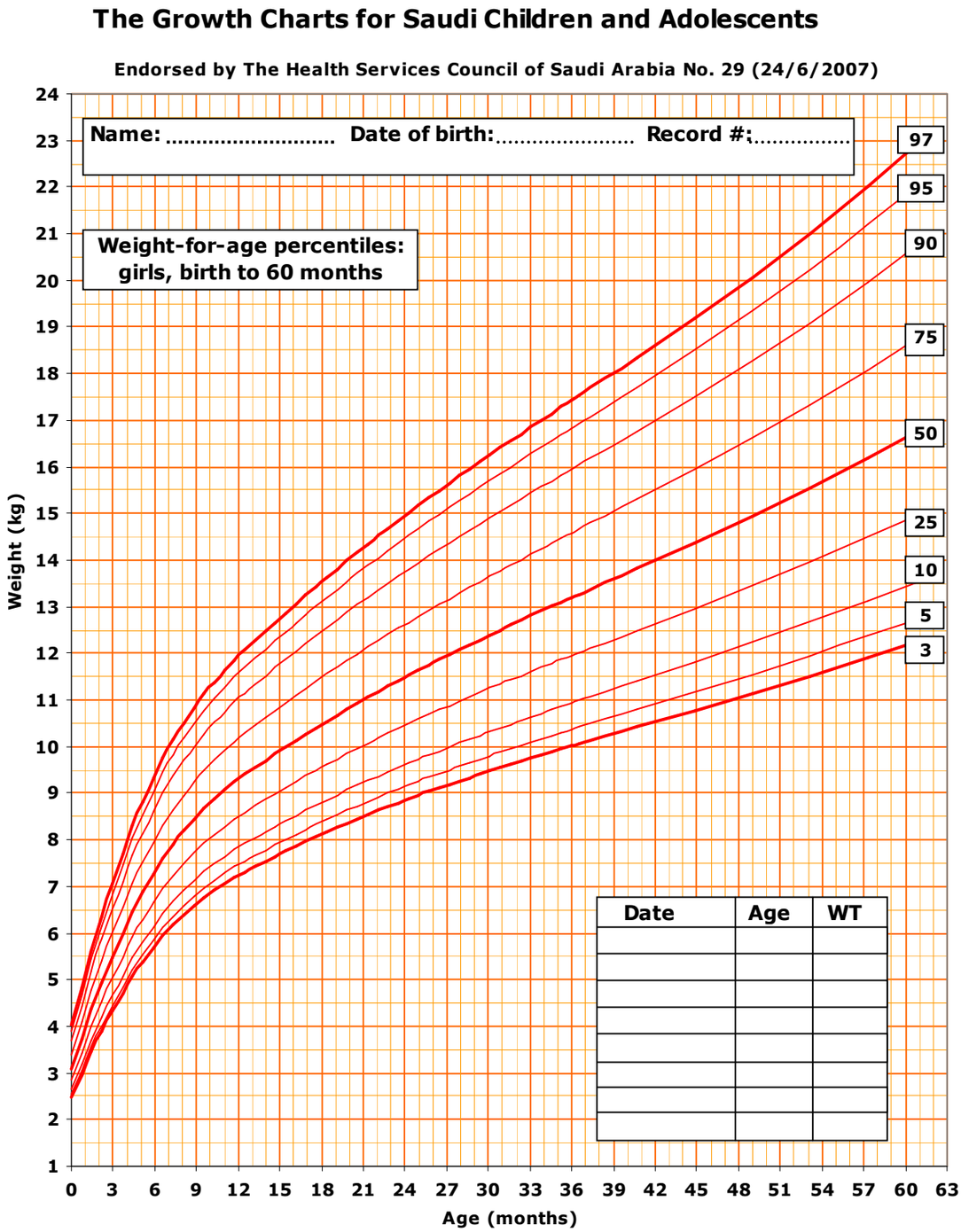

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FIGURE 4–2B Weight for age percentiles: girls, birth to 60 months.

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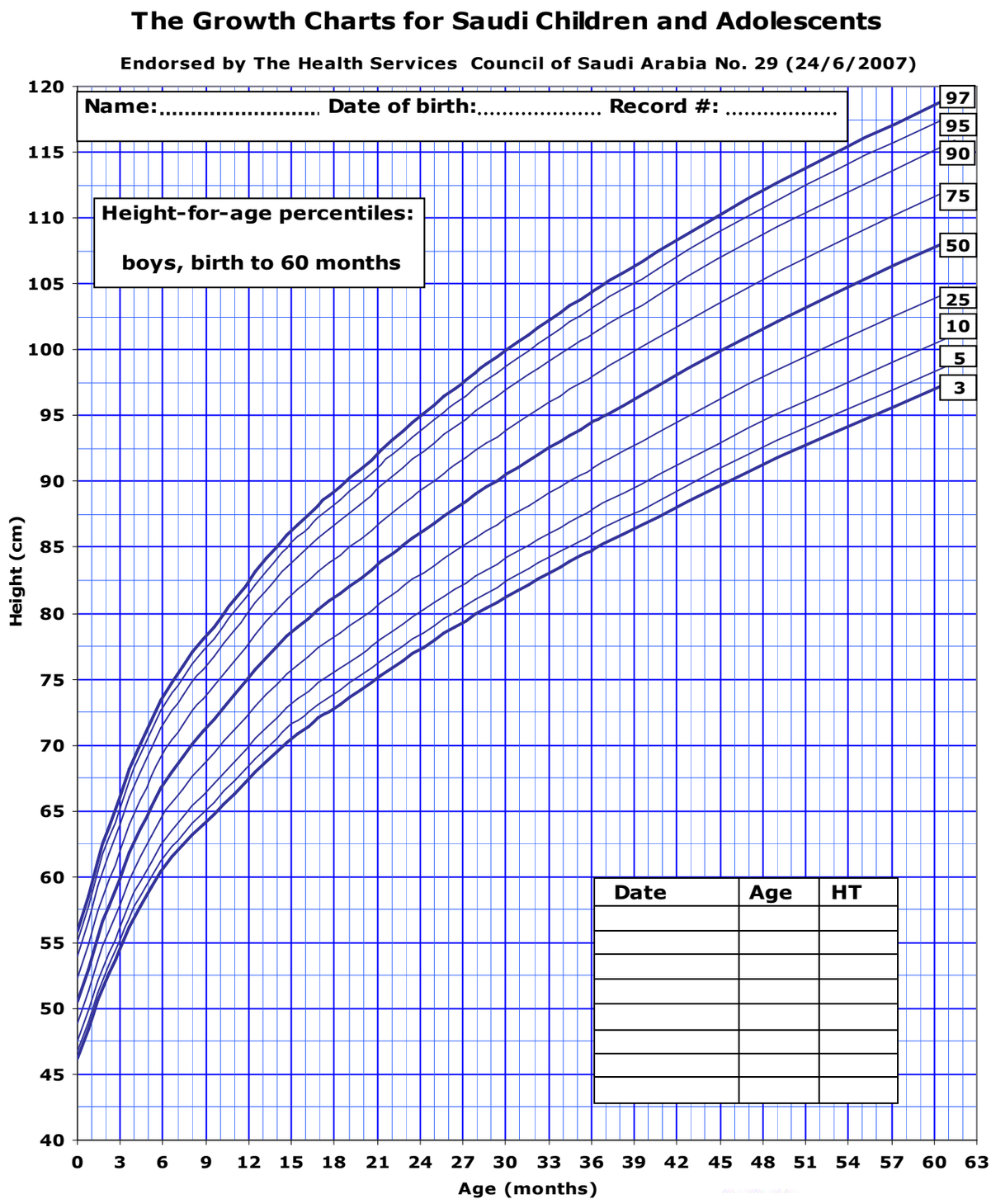

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FIGURE 4–2C Height for age percentiles: boys, birth to 60 months.

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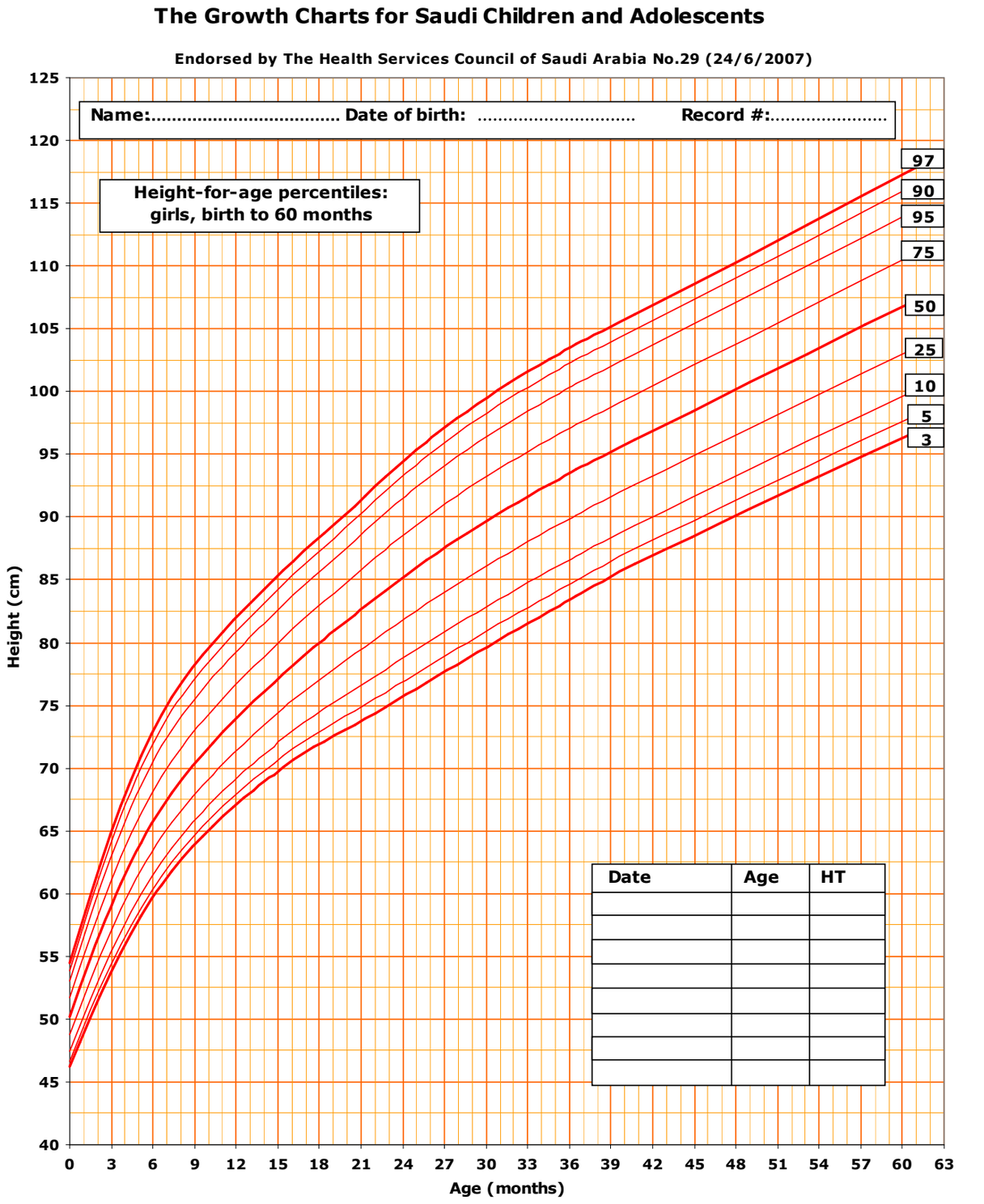

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NB: The age is based on the Gregorian calendar.

FIGURE 4–2D Height for age percentiles: girls, birth to 60 months.

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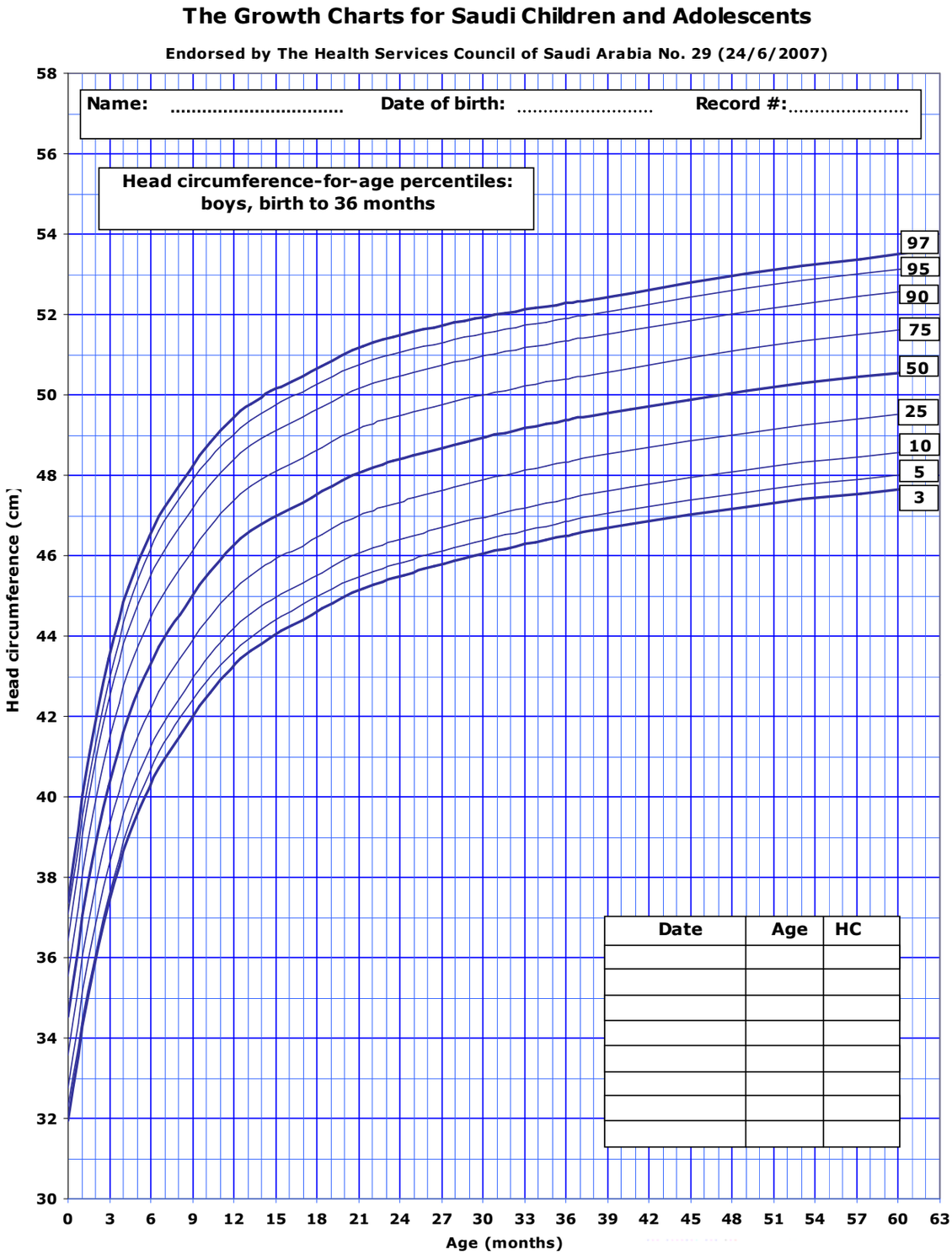

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FIGURE 4–2E Head circumference for age percentiles: boys, birth to 60 months.

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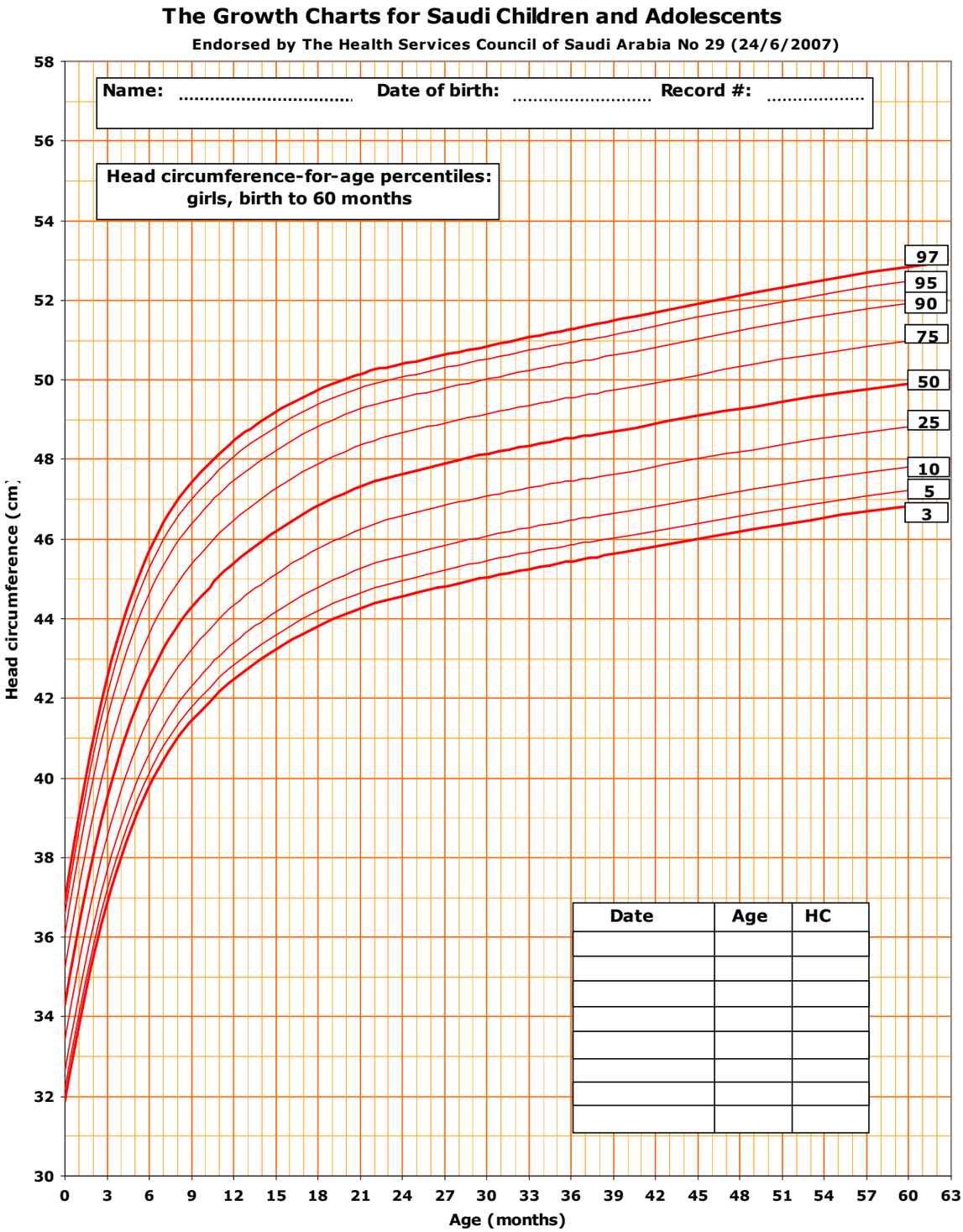

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FIGURE 4–2F Head circumference for age percentiles: girls, birth to 60 months.

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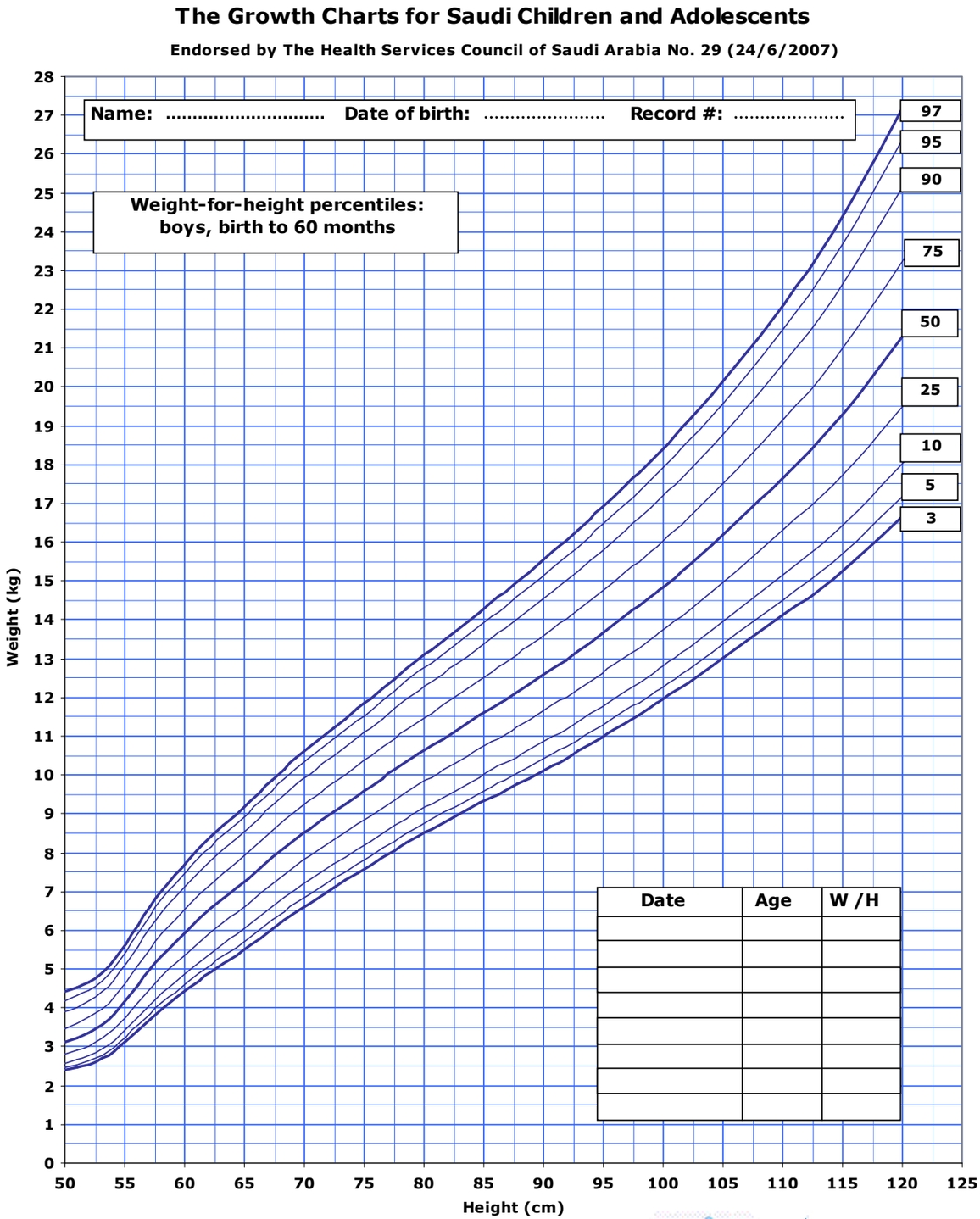

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FIGURE 4–2G Weight for height percentiles: boys, birth to 60 months.

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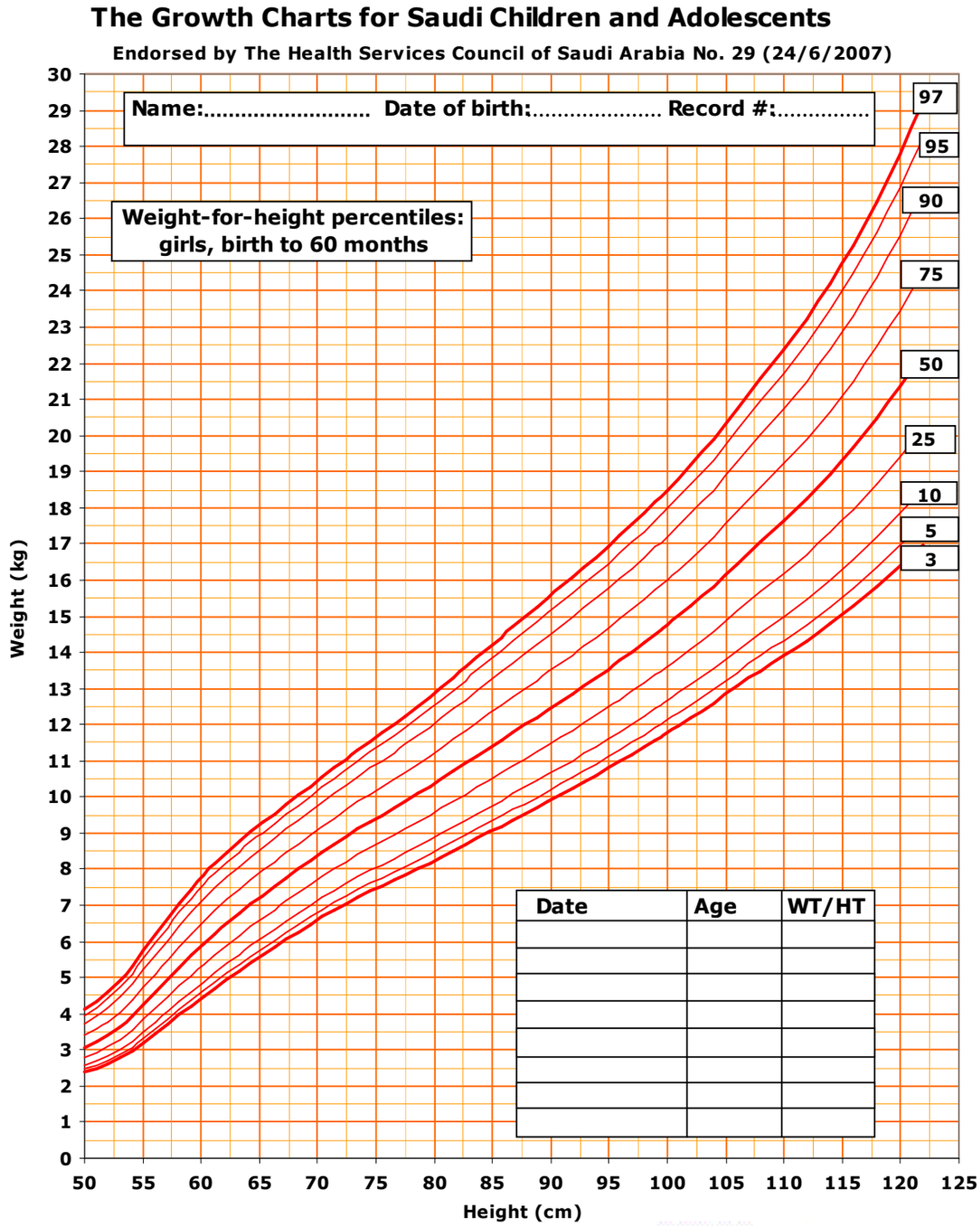

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FIGURE 4–2H Weight for height percentiles: girls, birth to 60 months.

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HEAD AND CHEST CIRCUMFERENCE

Head circumference in infants can be an early indication of abnormal development of the brain. Any head circumference above the 95th percentile usually indicates hydrocephalus, an accumulation of fluid around the brain. This leads to increased intracranial pressure and brain damage.

Hydrocephalus can be caused by abnormal development of the ventricles in the brain, bacterial meningitis, or tumors.

- A below-normal value for head circumference can be an indication of microencephaly, or a small brain. This too can lead to mental restriction.
- Microencephaly can be caused by a congenital defect, infections during pregnancy, a premature closure of the fontanels in the brain, or genetic defects.

Chest circumference may also be measured in infants if suspicion exists of overdevelopment or underdevelopment of the heart or lungs, or a calcification of the rib cartilage.

- From birth to 1 year of age, the head circumference is usually greater than the chest circumference.
- At about 1–2 years, the head and chest circumferences are equal.
- After that, the chest circumference is larger than the head circumference.
- Chest circumferences may also be measured in adults with chronic obstructive pulmonary diseases such as emphysema to determine the progression of the disease.

WEIGHT

Weight is measured frequently in adults to monitor excessive weight loss or gain with hormone disorders such as diabetes, thyroid disease, digestive disorders, and hypertension (high blood pressure) with fluid retention. Patients with cancer or patients receiving chemotherapy are weighed frequently to monitor weight loss. Daily weights are often ordered for patients with edema (swelling) due to heart, kidney, or other diseases. When taking daily weights, note the following points:

- Use the same scale each day.
- Make sure the scale is balanced before weighing the patient.
- Weigh the patient at the same time each day.
- If possible, weigh the patient early in the morning, before any food or liquids have been consumed.
- Make sure the patient is wearing similar clothing each day.
- Ask the patient to void to empty the bladder.

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Most patients are very weight conscious. Parents may also worry about the weight of their children. Therefore, it is very important for the health care provider to make only positive statements while weighing a patient. In addition, privacy must be provided while weighing a patient and care should be taken so other individuals cannot see the patient's weight on the scale.

HEIGHT

Height measurements are performed more frequently in older adults to check for osteoporosis, a degeneration of the spinal column caused by a deterioration of cartilage and bone. As the intervertebral disks between the vertebrae deteriorate, the individual will become shorter.

Safety

Careful consideration must be given to the safety of the patient while weight and height are being measured. Observe the patient closely at all times. Prevent falls from the scale and possible injury from the protruding height lever.

SCALES

- A wide variety of scales are used to obtain height and weight measurements.
- Some clinical scales contain a balance beam for measuring weight and a measuring rod for determining height (**Figure 4–3A**). Infant scales provide an area for placing the infant in a lying-down, or flat, position.
- Some facilities have digital scales that show the weight automatically. Institutions, such as hospitals or long-term care facilities, may have special scales for patients who are unable to stand. Such scales include the wheelchair scale (**Figure 4–3B**) and the bed scale with a mechanical lift.
- Some hospitals and long-term care facilities have beds with a built-in scale (**Figure 4–3C**) that can be used to weigh comatose or paralyzed patients. It is important to follow the manufacturer's instructions while using any special scale to obtain accurate weight measurements.

FIGURE 4–3A
A beam-balance scale.

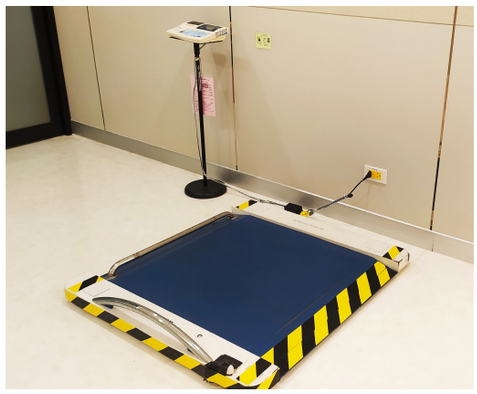

FIGURE 4–3B
A wheelchair scale.

FIGURE 4–3C A bed with a built-in scale.

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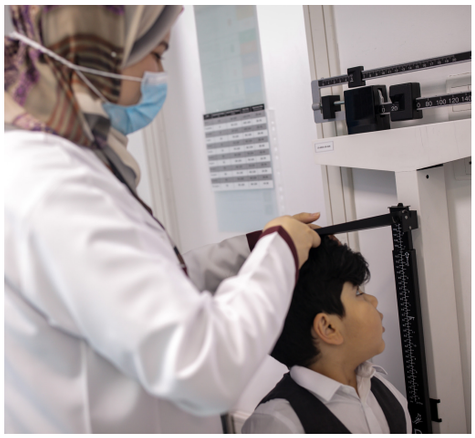

FIGURE 4–4A Raise the height bar of the scale higher than the height of the patient.

FIGURE 4–4B Move the bar of the height measuring scale down until it just touches the top of the patient's head.

- Weight is recorded as kilograms (kg). Metric scales measure in kg and have 0.1-kg increments. Height is recorded as centimeters (cm). The measuring bar has 1-cm increments.

Math

HOW TO MEASURE AND RECORD THE HEIGHT AND WEIGHT OF AN ADULT OR CHILD

- Assemble the equipment.
- Always wash your hands before beginning the procedure.
- Introduce yourself and identify the patient. Explain the procedure.
- Ask the patient to remove shoes, heavy outer clothing, purses, and heavy objects that may be in the pockets of clothing. In a hospital or long-term care facility, the patient is usually weighed in a gown.
- Raise the height bar higher than the height of the patient (**Figure 4–4A**).
- Assist the patient onto the scale. The patient should stand unassisted, with their feet centered on the platform and slightly apart.
- Caution: Watch the patient closely at all times to prevent falls.

Safety

- Move the bar of the height measuring scale down until it just touches the top of the patient's head (**Figure 4–4B**).
- Caution: Move slowly. Do not hit the patient with the bar.

Safety

- Instruct the patient to stand as erect as possible. Ask them to look straight ahead to keep the head level.
- Wait until the digital display is stationary and record the numbers shown.
- Recheck your reading. Record the weight correctly.
- If the height scale is not recorded digitally, read the height from the scale bar.
- Recheck your reading. Record the height correctly.

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- Elevate the height bar and help the patient get off the scale.
-
Safety
Caution: Watch the patient closely to prevent falls.
- Replace all equipment and wash your hands.
-
Comm
Record all required information on the patient record and enter it into the computer; for example: *date*, *time*, *Wt: 60 kg*, *Ht: 163 cm*, *and your signature and title*.
- In offices with electronic health records (EHRs), information is entered directly into the patient's record on a computer.

HOW TO MEASURE AND RECORD THE WEIGHT OF AN INFANT

- Assemble the equipment.
- Wash your hands.
- Prepare the scales. Place a towel or scale paper on the scale pan to protect the infant from the shock of the cold metal and from pathogens.
- Introduce yourself. Explain the procedure to the parent/carer. Identify the infant by asking the parent/carer for the infant's name. Ask the parent/carer to undress the infant. An undershirt or pajama is sometimes left on the infant.
- Place the infant on the scales and wait for the digital display to show the weight.
-
Safety
Watch closely at all times. To prevent falls, keep one hand over the infant (**Figure 4–5**).

FIGURE 4–5 Always keep one hand close to the infant to prevent them from falling off the scale.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 175 14/06/2023 10:29

- Record the weight in kilograms. Check your reading for accuracy.
- Comm Record all required information on the patient record and/or enter it into the computer; for example: *date*, *time*, *Wt: 4.3 kg*, *and your signature and title*.
- In offices with electronic health records (EHRs), information is entered directly into the patient's record on a computer.
- Clean and replace all equipment. Turn off the scales and use a disinfectant to wipe them.

HOW TO MEASURE AND RECORD THE HEIGHT OF AN INFANT

- Assemble the equipment (a tape measure).
- Wash your hands.
- Pick up and place the infant on a flat surface.
- Safety Watch closely at all times. Do not leave the infant unattended. If it is necessary to reach for anything nearby, use one hand to hold the infant and the other hand to reach.

FIGURE 4–6A Position the infant's head against the zero mark bar and gently straighten the legs to measure the infant's height.

FIGURE 4–6B Hold the tape measure in a straight line to measure an infant's height.

وزارة التعليم
Ministry of Education
2016 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 176 14/06/2023 10:29

FIGURE 4–7 To measure head circumference, bring the tape around the infant's head, just above the ears, and back to the forehead.

- Place the zero mark of the measuring tape or rod at the infant's head. If the measuring bar is a part of the examination table, position the infant so that their head is at the zero mark (**Figure 4–6A**). Ask the parent/carer or an assistant to hold the head at this mark. Gently straighten the infant's legs. If a tape measure is used, measure to the infant's heel (**Figure 4–6B**). If a bar is used, position the heel on the bar while holding the leg straight.
- If the infant is lying on examining table paper, mark the paper at the infant's head and heel. Then measure the marked area.
- Record the height correctly in centimeters. Recheck your reading.
- Comm Record all required information on the patient record and enter it into the computer; for example: *date*, *time*, *Ht: 60 cm*, *and your signature and title.*
- In offices with electronic health records (EHRs), information is entered directly into the patient's record on a computer.
- Clean and replace all equipment. Fold up the tape measure.

HOW TO MEASURE AND RECORD THE HEAD CIRCUMFERENCE OF AN INFANT

- Assemble the equipment (a tape measure).
- Wash your hands.
- Position the infant on the examination table or ask the parent/carer to hold the infant.
- Use a thumb or finger to hold the zero mark of the tape measure against the infant's forehead just above the eyebrows.
- Use your other hand to bring the tape around the infant's head, just above the ears, over the occipital bone at the back of the head, and back to the forehead to meet the zero mark on the tape (**Figure 4–7**).

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 177 14/06/2023 10:29

- Pull the tape snug to compress the hair, but not too tight.
- Read the tape measure to the nearest 0.1 cm.
- Record the reading.
- Return the infant to the parent/carer.
- Clean and replace all equipment. Fold up the tape measure.

HOW TO MEASURE AND RECORD THE CHEST CIRCUMFERENCE OF AN INFANT

- Assemble the equipment (a tape measure).
- Wash your hands.
- Use the thumb of one hand to hold the zero mark of the tape at the middle of the sternum.
- Use your other hand to wrap the tape snugly under the axillary area and around the back to meet at the midsternal area (**Figure 4–8**).
- Make sure that the tape is at the nipple level of the chest and that it is not twisted.
- Read the measurement after the infant has exhaled or during the resting phase between respirations.
- Read the tape measure to the nearest 0.1 cm.
- Record the reading.

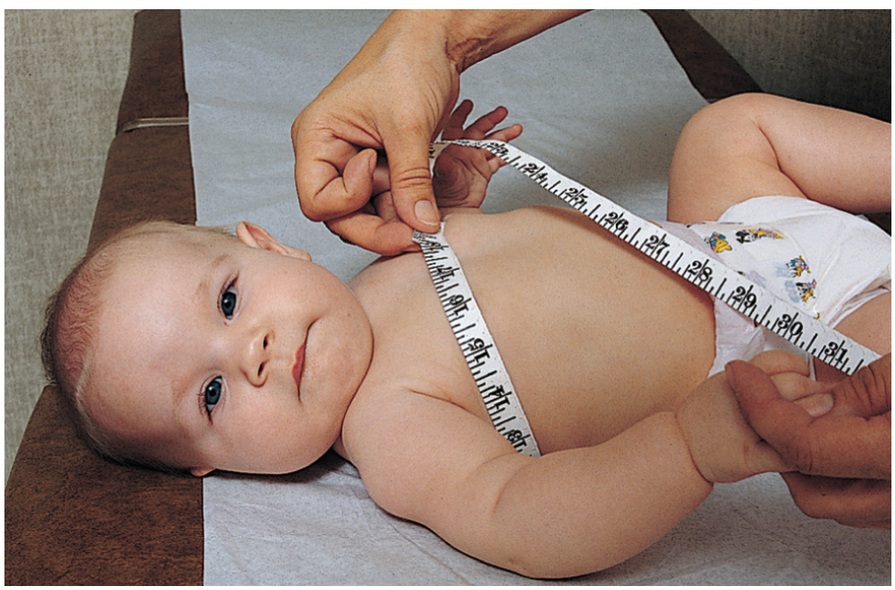


FIGURE 4–8 To measure chest circumference, wrap the tape snugly around the chest and back at the nipple line.

وزارة التعليم
Ministry of Education
2016 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 178 14/06/2023 10:29

-
Comm
Record all required information on the patient record and enter it into the computer; for example: *date*, *time*, *chest circumference: 43.8 cm*, *and your signature and title*.
- In offices with electronic health records (EHRs), information is entered directly into the patient's record on a computer.
- Clean and replace all equipment. Fold up the tape measure.

checkpoint

1. What three measurements are taken regularly for an infant?
2. What brain condition does an infant head circumference above the 95th percentile indicate?

4:2 POSITIONING A PATIENT

A wide variety of positions are used for different procedures and examinations. The patient may need to be positioned on a medical examination table or a surgical table. It is important to know how to operate the table before attempting to position a patient. Obtain instruction or read the manufacturer's directions carefully. After use, medical examination tables and surgical tables are usually cleaned with an antiseptic soap or a disinfectant solution. In addition, table paper is frequently used to cover an examination table prior to the examination and is removed and replaced after the examination.

Comm
During any procedure or examination, reassure the patient. Make sure that the patient understands what is being done and grants permission for the procedure. At all times, watch the patient closely for signs of distress.

Safety
Observe all safety factors to prevent falls and injuries. Use correct body mechanics at all times to prevent injury to yourself.

It is also essential to make sure that the patient is not exposed during any examination or procedure. The door should be closed and the curtains, if present, should be drawn. Care must be taken to properly drape or cover the patient to avoid unnecessary exposure. At the same time, the drape must be applied so that the physician or technician has ready access to the area to be examined or treated.

Some of the most common examination positions are listed and described below.

- **Horizontal recumbent (supine)** position:
  - This position is used for examination or treatment of the front, or anterior, part of the body (**Figure 4–9**).

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 179 14/06/2023 10:29

- The patient lies flat on their back with the legs slightly apart. One small pillow is allowed under the head.
- The arms lie flat at the side of the body.
- The drape is placed over the patient but left loose on all sides to facilitate examination or treatment.

- **Prone** position:
  - This position is used for examination or treatment of the back or spine (**Figure 4–10**).
  - The patient lies on their abdomen and turns their head to either side. A small pillow may be placed under the head.
  - The arms may be flexed at the elbows and positioned on either side of the head or positioned along the side of the body.
  - One sheet or drape is placed over the patient but left loose on all sides to facilitate examination or treatment.

- **Sims' (left lateral)** position:
  - This position is used for simple rectal and sigmoidoscopic examinations, enemas, rectal temperatures, and rectal treatments (**Figure 4–11**).
  - The patient lies on their left side.
  - The left arm is extended behind the back.
  - The head is turned to the side. A small pillow may be used.
  - The right arm is in front of the patient, and the elbow is bent.
  - The left leg is bent, or flexed, slightly.
  - The right leg is bent sharply at the knee and brought up to the abdomen.
  - Draping can be done with one large sheet or two small sheets that meet at the rectal area. A sheet with a hole at the examination site may also be used. All sheets hang free at the sides.

- **Knee–chest** position:
  - This position is used for rectal examinations, usually a sigmoidoscopic examination (**Figure 4–12**). It is only used in rare circumstances when proctologic tables are not available.
  - The patient rests the body weight on the knees and chest.
  - The arms are flexed slightly at the elbows and are extended above the head.

وزارة التعليم
Ministry of Education
2016 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 180 14/06/2023 10:29

- The knees are slightly separated, and the thighs are at right angles to the table.
- Draping can be done with one large sheet or two small sheets that meet at the rectal area. A large sheet with a hole at the rectal area can also be used. Sheets hang loose with no tucks.
- Safety Caution: Do not place the patient in this position until the physician is ready to begin the examination.
- Safety Caution: Never leave a patient alone in this position. This is a difficult position for the patient to maintain and should be used only as long as absolutely necessary.

- **Fowler's** positions:
  - These positions are used to facilitate breathing, to relieve distress, to encourage drainage, and to examine the head, neck, and chest.
  - The patient lies on the back.
  - The head is elevated to one of three main positions:
    - Low Fowler's: the head is elevated to a 25-degree angle.
    - Semi-Fowler's (or mid-Fowler's): the head is elevated to a 45-degree angle (the most frequently used position) (**Figure 4–13A**).
    - High Fowler's: the head is elevated to a 90-degree angle (**Figure 4–13B**).
  - The legs lie flat on the table but the knees are bent slightly and are sometimes supported on a pillow.
  - A sheet is used to drape the patient, which is left hanging loose.

- **Lithotomy** position:
  - This position is used for vaginal examinations, urinary catheterization, cystoscopic examinations, and surgery of the pelvic area (**Figure 4–14**).
  - The patient is positioned on their back.
  - The knees are separated and flexed, and the feet are placed in stirrups.
  - The arms rest at the sides.
  - The buttocks are at the lower end of the table.
  - The lower end of the table is dropped down or pushed in depending on the model of the examination table.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 181 14/06/2023 10:29

- Draping is done with one large sheet placed over the body in a diamond shape. One corner is at the upper chest, and one corner hangs loose between legs. Each of the other two corners is wrapped around a foot.

- **Dorsal recumbent** position:
  - This position is similar to the lithotomy position, but the patient is in bed or on a table without stirrups (**Figure 4–15**).
  - The feet are separated but flat on the table or bed.
  - The knees are bent.
  - Draping and other points are the same as for the lithotomy position.

- **Trendelenburg** position:
  - This position increases circulation of blood to the head and brain, and can be used for circulatory shock. The entire bed or table is elevated at the feet. The patient lies in the horizontal recumbent position, with the head lower than the feet.
  - The surgical Trendelenburg position (**Figure 4–16**) can be used for surgery on pelvic organs and for pelvic treatments. The patient is flat on their back. The table is lowered at a 45-degree angle to lower the head, and the feet and lower legs are inclined downward.
  - Straps are frequently used to hold the patient in position.
  - Draping for this position depends on the treatment being performed; usually, one large sheet is used and left hanging loose. For surgical procedures, the patient is draped with a sheet that has a hole to expose the surgical area.

- **Jackknife (proctologic)** position:
  - This position is used mainly for rectal surgery or examinations and for back surgery or treatments.
  - The patient is in the prone position.
  - The table is elevated at the center so that the rectal area is at a higher elevation. A special surgical table is required for this position (**Figure 4–17**).
  - The head and chest point downward. The feet and legs hang down at the opposite end of the table.
  - The patient must be supported to prevent injury. Straps are used to hold the patient in position.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 182 14/06/2023 10:29

- Draping is done with a surgical sheet that has a hole to expose the surgical or treatment area. Two small sheets that meet at the surgical or treatment area can also be used.
- Safety Caution: It is important to use good body mechanics while positioning the patient. This will protect both yourself and the patient.

checkpoint

1. When positioning a patient, what should you do to prevent injury to yourself?
2. What are Fowler's positions used for?

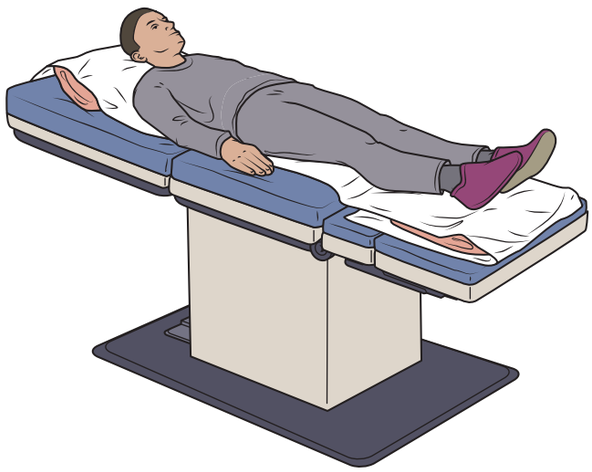


FIGURE 4–9 Horizontal recumbent (supine) position.

FIGURE 4–10 Prone position.

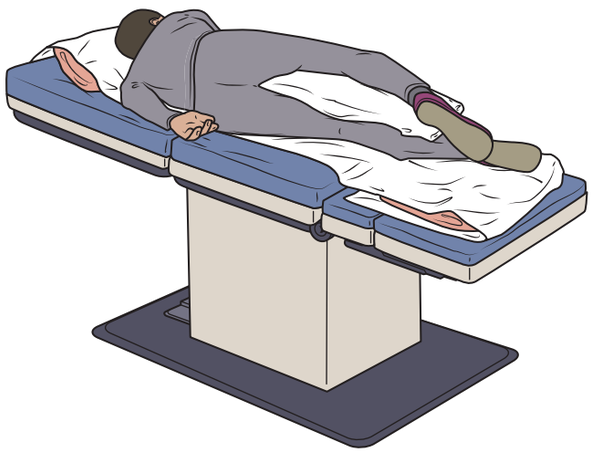


FIGURE 4–11 Sims' (left lateral) position.

FIGURE 4–12 Knee–chest position.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 183 14/06/2023 10:29

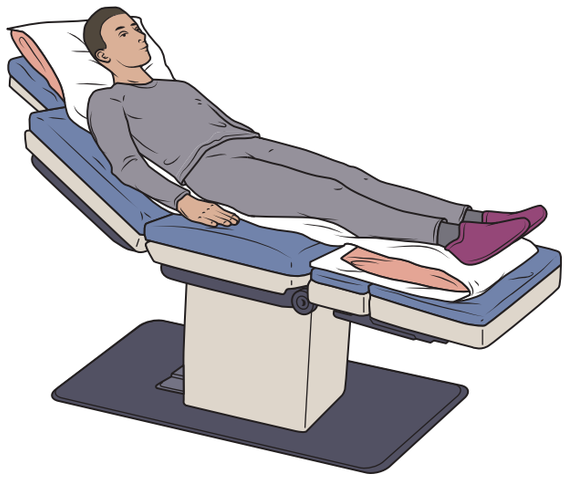


FIGURE 4–13A Semi-Fowler's (mid-Fowler's) position.

FIGURE 4–13B High Fowler's position.

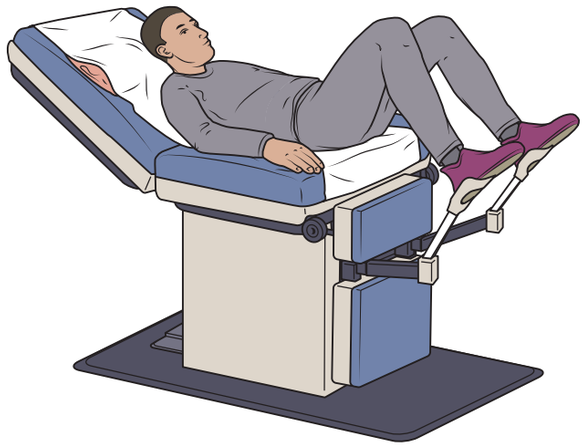


FIGURE 4–14 Lithotomy position.

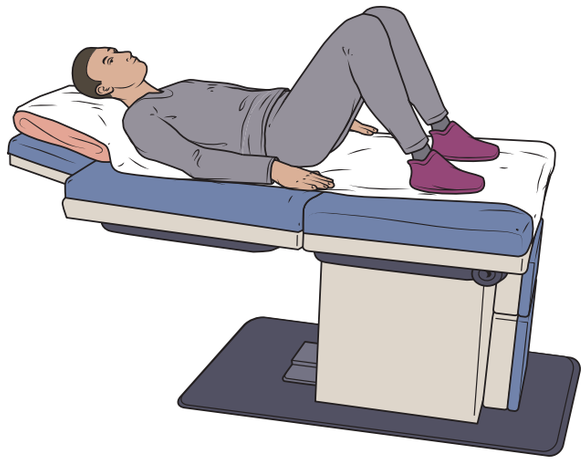


FIGURE 4–15 Dorsal recumbent position.

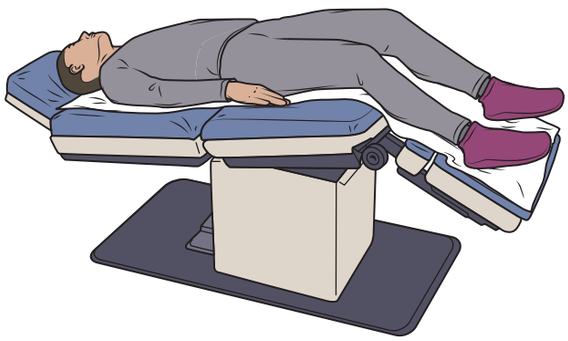


FIGURE 4–16 Surgical Trendelenburg position.

FIGURE 4–17 A special surgical table is required for the jackknife (proctologic) position.

وزارة التعليم
Ministry of Education
2016 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 184 14/06/2023 10:29

4:3 SCREENING FOR VISION PROBLEMS

Vision screening tests are given to measure an individual's **visual acuity**, or ability to perceive and comprehend the sense of sight. They are often given as part of a physical examination or to detect eye disease. Any test for visual acuity should be conducted in a well-lit room. Natural daylight, with no direct sunlight, is preferred. During any test, it is important to watch the patient for squinting, leaning toward the eye chart, closing one eye when both eyes are being tested, excessive blinking, and watering of the eyes. If defects are noted on any test, the patient should be referred to an ophthalmologist for a more extensive examination.

One method of vision screening involves the use of visual acuity charts. These charts are used to test distant vision. They come in a variety of types. Some contain pictures for use with small children.

Characters (letters or pictures) on the chart have specific heights, ranging from small, on the bottom of the chart, to large, on the top. When standing 6 meters from the chart, a person with normal visual acuity should be able to see characters that are 20 millimeters (mm) high.

Visual acuity charts test only for defects in distant vision, or for short-sightedness (**myopia**). Defects in close vision (problems with reading small print and seeing up close), known as long-sightedness (**hyperopia**), are tested by a different system. This system uses a printed card with different short paragraphs. Each paragraph is printed in a different size type, ranging from 0.37 to 2.5 millimeters (mm) high. A card with different characters or pictures is available for use with small children or individuals who cannot read. The patient holds the card approximately 35–40 cm away from the eyes. The patient then reads printed text or identifies pictures that gradually become smaller. The smallest print or character that the patient can read or identify without error is recorded.

Defects in color vision, or color blindness, are tested by using a series of numbers printed in colored dots against a background of dots in contrasting color (**Figure 4–18**). Patients with normal color vision are able to identify the numbers. Patients with color blindness either are unable to see the numbers or identify incorrect numbers. This test is usually conducted in a room illuminated by natural daylight but not bright sunlight.

When screening for visual acuity, there are special terms to remember:

- **Myopia:** Short-sightedness; defect in distant vision.
- **Hyperopia:** Long-sightedness; defect in close vision.
- **Ophthalmoscope:** An instrument for checking the eye.
- **Tonometer:** An instrument for measuring intraocular tension or pressure; increased pressure often indicates glaucoma.

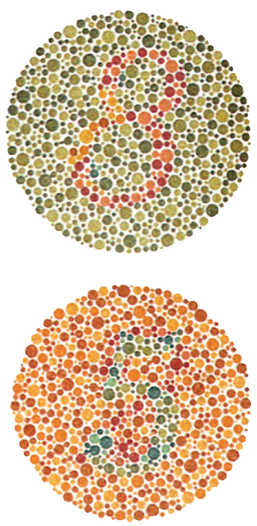


FIGURE 4–18 People with color blindness are not able to see the numbers in these Ishihara color plates.

وزارة التعليم
Ministry of Education
2026 - 1448

checkpoint

1. Where should a test for visual acuity take place?
2. What is an ophthalmoscope used for?

4:4 ASSISTING WITH PHYSICAL EXAMINATIONS

A large variety of physical examinations are performed. The methods used and the equipment available vary from physician to physician. However, there are some basic principles that apply to all examinations. Four main techniques used during the examination are observation, palpation, percussion, and auscultation.

- **Observation** (inspection): The physician looks at the patient carefully to observe things such as skin color, rash, growths, swelling, scars, deformities, body movements, condition of hair and nails, and general appearance.
- **Palpation**: The physician uses the hands and fingers to feel various parts of the body (**Figure 4–19**) and determine whether a part of the body is enlarged, hard, out of place, or painful to the touch.
- **Percussion**: The physician taps and listens for sounds coming from various body organs (**Figure 4–20**). The physician may place one or several fingers of one hand on a part of the body, then use the fingers

FIGURE 4–19 For palpation, the physician uses the hands and fingers to feel various parts of the body.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 186 14/06/2023 10:29

of the other hand to tap the body part. The sounds emitted allow a trained individual to determine the size, density, and position of underlying organs.

- **Auscultation**: The physician listens to sounds coming from within the patient's body (**Figure 4–21**). A stethoscope is used in most cases. The physician listens to sounds produced by the heart, lungs, intestines, and other body organs.

FIGURE 4–20 Percussion involves tapping on body parts and listening to sounds coming from body organs.

FIGURE 4–21 The physician is using a stethoscope and auscultation to listen to posterior lung and heart sounds.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 187 14/06/2023 10:29

EQUIPMENT

All necessary equipment should be assembled prior to the examination (**Figure 4–22**). The equipment needed will vary depending on the body areas to be examined. Some of the equipment and instruments used for different examinations include:

- **Laryngeal mirror:** An instrument with a mirror at one end; used to examine the larynx, or voice box, in the throat.
- **Ophthalmoscope:** A lighted instrument used to examine the eyes (**Figure 4–23**).
- **Otoscope:** A lighted instrument used to examine the ears (**Figures 4–24A** and **4–24B**).
- **Percussion (reflex) hammer:** An instrument used to test tendon reflexes.
- **Sigmoidoscope:** A lighted instrument used to examine the sigmoid colon (the inside of the lower part of the large intestine); used during sigmoidoscopic examinations.
- **Speculum:** An instrument used to examine internal canals of the body.
- **Sphygmomanometer:** An instrument used to measure blood pressure.
- **Stethoscope:** An instrument used for listening to internal body sounds.

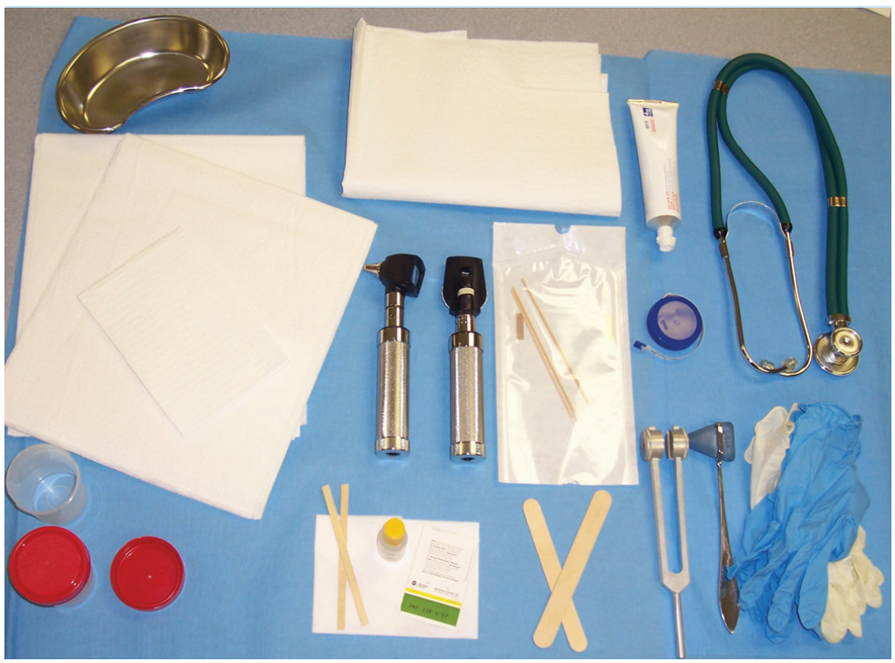


FIGURE 4–22 All necessary equipment should be assembled prior to the examination.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 188 14/06/2023 10:29

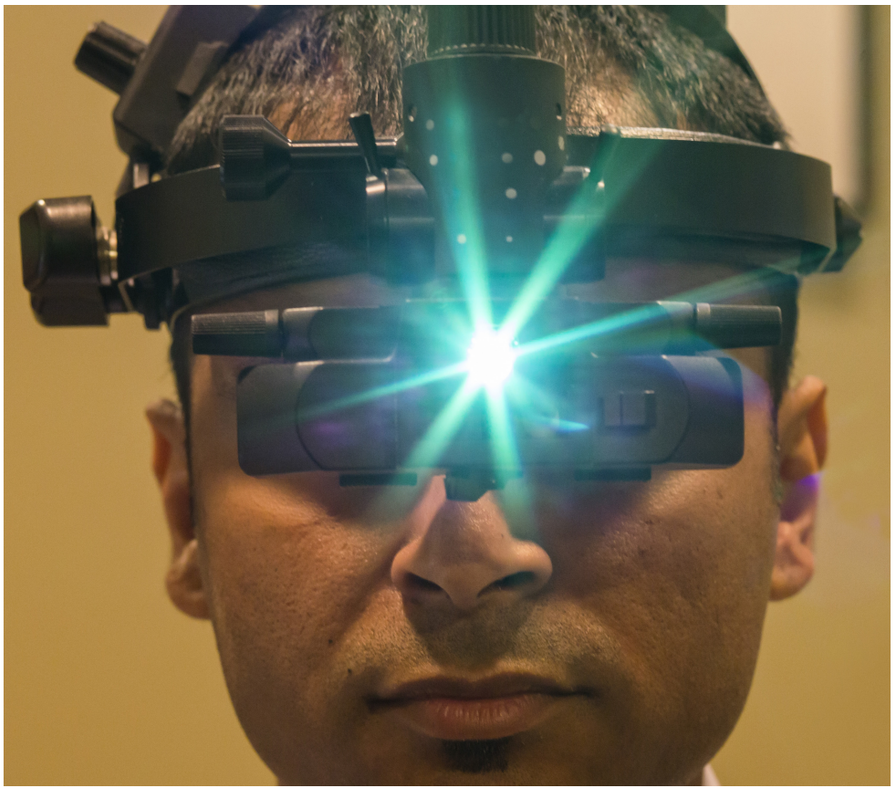


FIGURE 4–23 An ophthalmoscope is used to examine the patient's eye.

- **Tongue blade/depressor:** A wood or plastic stick used to depress (hold down) the tongue so that the throat can be examined.

PREPARE YOURSELF

Precaution

Standard precautions must be followed at all times while assisting with physical examinations. Any instruments or equipment contaminated by blood or body fluids must be correctly cleaned and disinfected or sterilized after use. The medical assistant must always be aware of and take steps to prevent the spread of infection.

- Hands must be washed frequently.
- Precaution

  Gloves must be worn if any contact with blood or body fluids is possible.
- If splashing of fluids is possible, wear a gown, mask or face shield, and eye protection. Observe standard precautions at all times.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 189 14/06/2023 10:29

FIGURE 4–24A An otoscope is used to examine the interior of the patient's ear.

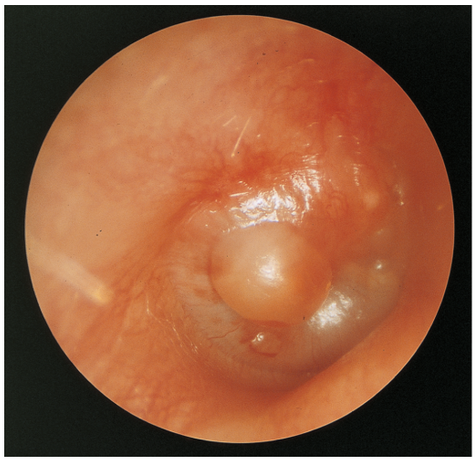


FIGURE 4–24B An otoscopic examination may reveal a bulging tympanic membrane, a sign of otitis media or middle ear infection.

PREPARE THE PATIENT

- Introduce yourself and identify the patient. Explain the procedure. Remember that this procedure has multiple steps.
- Comm Preparation of the patient must include carefully explaining all procedures. Thorough explanations can help alleviate some fear. Patients often are apprehensive and need reassurance.
- Ask the patient to void their bladder before the examination so that the bladder will be empty and internal organs in the area of the bladder can be palpated. If a urinalysis is ordered, the urine specimen can be obtained at this time.
- Some tests frequently done prior to the physical examination might include:
  - Record height and weight.
  - Take and record vital signs, including temperature, pulse, respiration, and blood pressure.
  - Check visual acuity and record results.
  - Perform an audiometric screening (a special hearing test requiring additional training to administer) and record results.
  - Obtain blood samples for tests ordered (various tests may be ordered by the physician).
  - Run an ECG (electrocardiogram; a test to check the electrical conduction pattern in the heart) if ordered by the physician.
- Seat the patient on the examination table. Drape the patient correctly.
- Notify the physician that the patient is ready.

DURING THE EXAMINATION

- Be prepared to assist as necessary.
- Hand equipment to the physician as needed.
- Position the patient correctly for each part of the examination.
- Be ready to help with each procedure.

وزارة التعليم
Ministry of Education
2016 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 190 14/06/2023 10:29

AFTER THE EXAMINATION

- When the examination is complete, assist the patient into a sitting position. Allow the patient to rest for a few minutes.
- If no signs of weakness or dizziness are noted, help the patient to get off the table.
- Inform the patient how and when they will be notified of test results.
- Ask the patient to get dressed or assist with dressing if necessary.
- Label all specimens and cultures with the patient's name, identification number, and physician's name. Print all information on the laboratory requisition form(s) or use a computer-generated form. This might include date, time, patient's name, address, identification number, physician's name and identification number, type or site of specimen, and test ordered. Send specimens to the laboratory as soon as possible.
- Wear gloves while cleaning and sterilizing any contaminated equipment. Put all contaminated disposable supplies in the infectious-waste bag. Use a disinfectant to wipe any contaminated areas.
- Remove the gloves and discard them in an infectious-waste bag. Wash your hands.
- Record all required information on the patient record or enter it into the patient's electronic health record. For example: *date*, *time*, *physical examination*, *throat culture sent to laboratory*, *and your signature and title*. Place a copy of any laboratory requisition forms in the patient's chart. The physician sometimes records the required information.

checkpoint

1. What four main techniques are used during an examination?
2. List five tests that are frequently done prior to the physical examination.

4:5 ASSISTING WITH MINOR SURGERY AND SUTURE REMOVAL

As a health care provider, you may be required to prepare for and assist with minor surgery or suture removal in a medical, dental, or health care facility. Minor surgery includes removing warts, cysts, tumors, growths, or foreign objects; performing biopsies of skin growths or tumors; suturing wounds; incising and draining body areas; and other similar procedures.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 191 14/06/2023 10:29

INSTRUMENTS AND EQUIPMENT

Instruments and equipment used depend on the type of surgery or procedure being done. Some basic instruments and supplies that may be used (**Figure 4–25**) include:

- **Scalpels:** Instruments with a handle attached to knife blades; used to incise (cut) skin and tissue. Disposable scalpels with a protective retractable blade to prevent sharps injuries are also available for use.
- **Surgical scissors:** Special scissors with blunt ends or sharp points or a combination; identified as sharp-sharp, sharp-blunt, or blunt-blunt; used to cut tissue.
- **Hemostats:** Special group of curved or straight instruments, usually striated at the ends; used to compress (clamp) blood vessels to stop bleeding or to grasp tissue.
- **Tissue forceps:** Instruments with one or more fine points (or teeth) at the tip of the blades; used to grasp tissue.
- **Splinter forceps:** Instruments with fine-pointed ends and no teeth; used to remove foreign objects from the skin or tissues.
- **Towel clamps:** Instruments with sharp points at the end that lock together; used to attach surgical drapes to each other; also used to clamp onto tissue that has been dissected (separated or cut into pieces).
- **Retractors:** Instruments used to hold or draw back the lips, or sides, of a wound or incision; also called skin hooks.
- **Suture materials:** Special materials used for stitches (**sutures**); applied to hold a wound or incision closed. Absorbable suture materials such as surgical gut or vicryl is digested by tissue enzymes and absorbed by the body. Nonabsorbable suture materials such as silk, nylon, Dacron, stainless steel, and metal skin clips or staples are removed after the tissue or skin has healed (**Figure 4–26**).
- **Needle holders:** Special instruments used to hold or support the needle while sutures are being inserted.
- **Needles:** Pointed, slender instruments with an eye at one end; used to hold suture material while sutures are being inserted into an incision or wound; usually curved for easier insertion into the skin. Swaged needles have the suture material attached to the needle as one unit.
- **Bandage scissors:** Special scissors with blunt lower ends; used to remove dressings and bandages. The blunt ends prevent injury to the skin directly next to the dressing material.

وزارة التعليم
Ministry of Education
2016 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 192 14/06/2023 10:29

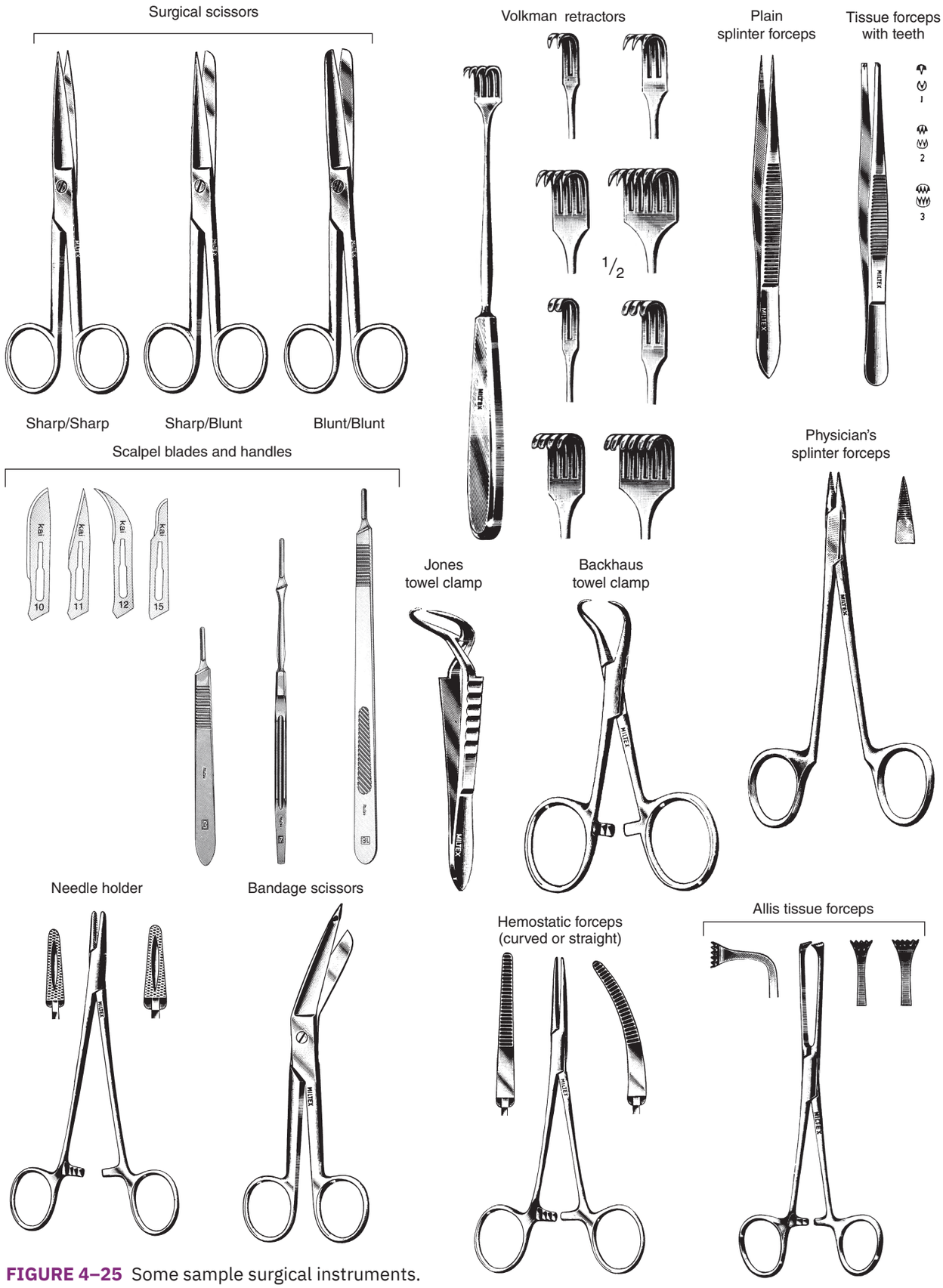


FIGURE 4–25 Some sample surgical instruments.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 193 14/06/2023 10:29

FIGURE 4–26 A wide variety of suture materials and needles are available for minor surgeries.

Preparation of the surgical tray requires the use of strict sterile technique to prevent infection. Instruments and supplies must be sterilized. Care must be taken to avoid contaminating the instruments and supplies when they are placed on the tray. Complete sterile setups are also available in commercially prepared, disposable packages. Examples include setups for insertion of sutures and for removal of sutures. It is important to follow sterile technique while opening the packages to maintain sterility of all materials in the package.

PREPARING THE PATIENT

Before any minor surgery, the patient must sign a written consent form. The consent form must describe the procedure, cite alternative treatments, and list possible complications or risks of the surgery. If the patient is a minor or lacks competence, an authorized person must sign the form. Most offices also provide written preoperative and postoperative instructions.

Comm

Patients who are undergoing minor surgery or suture removal are often fearful and apprehensive. Reassure the patient to the best of your ability. Refer specific questions regarding the surgery or procedure to the physician.

وزارة التعليم
Ministry of Education
2016 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 194 14/06/2023 10:29

PREPARING THE SITE

The patient's skin is usually prepared before minor surgery. To do this:

- Wash your hands and put on gloves.
- Wash the site thoroughly with an antiseptic soap.
- If the surgical area has excessive hair, the area may be shaved. If a skin shave has been ordered, hold the skin taut and use a disposable razor to shave in the direction of hair growth. Shaving the surgical area is controversial because shaving increases the risk for abrasions leaving open areas that are prone to infection.
-
Precaution
It is important to avoid nicking the patient with the razor. Discard long hairs on a gauze pad or paper towel. Rinse the area and then pat it dry with gauze.
- Before minor surgery, a local anesthetic is often administered by the physician. This numbs the surgical site and decreases pain. Before the injection of local anesthesia, the physician may apply a liquid or spray topical anesthetic to the surface of the skin to decrease the pain of the injection. Anesthetics must be available for use. They are usually placed on the side of the sterile tray.

DURING SURGERY

During surgery, the medical assistant will be expected to assist as needed. The procedure will depend on the physician doing the surgery. Be alert to all points of the procedure and be ready to help as needed.

- Sterile dressings must be available for use. These are usually placed directly on the surgical tray so that they are readily accessible. Some physicians prefer that sterile dressings be left in the original sterile wrappers and placed in the immediate area.
- The physician will apply sterile **drapes**. Have towel clamps ready for the physician to use to hold the drapes in position. The physician may cleanse the surgical site with an antiseptic.
- When the physician is ready to inject the anesthetic, use a gauze pad saturated with alcohol to clean the top of the anesthetic solution vial. Hold the vial in a convenient position so the physician can fill the syringe without contaminating the needle (**Figure 4–27**). The physician will then inject the anesthetic. The needle and syringe should be discarded immediately into a sharps container.
- If required, put on sterile gloves and assist as needed. Hold retractors, hand instruments, and assist with the procedure.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 195 14/06/2023 10:29

FIGURE 4–27 Hold the anesthetic solution vial in a convenient position so the physician can fill the syringe without contaminating the needle.

FIGURE 4–28 Tissue or biopsy specimens removed during minor surgery must be placed in the correct type of specimen container so they can be examined by a pathologist.

- Body tissues, abnormal growths, and other specimens removed during surgery are usually sent to a laboratory for examination. Each specimen must be placed in an appropriate container immediately to avoid loss. A biopsy specimen is usually placed in a formalin solution that preserves the specimen until it can be examined. Most laboratories will provide a health care facility with the required specimen containers.
- If tissue or a biopsy specimen is removed, open the lid of the specimen container. Hold the container close to the physician so the specimen can be placed into the container (**Figure 4–28**). Label the containers correctly and complete the laboratory requisition form. Many laboratories use computer-generated forms. The specimens should be sent to the laboratory as soon as possible.
- If the physician is going to insert sutures, have the suture material and suture needles ready for use.
- Get additional supplies or equipment as needed.

AFTER THE SURGERY

- After the surgery, assist with placement of dressings and bandages.
- Observe for any signs of distress. If no signs of weakness or dizziness are noted, help the patient get off the table. Review postoperative orders with the patient.
- Provide the patient with a written copy of postoperative orders if this is office policy. Inform the patient how and when they will be notified of test results.

وزارة التعليم
Ministry of Education
2023 - 1445
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 196 14/06/2023 10:29

- Label all specimens correctly with the patient's name, identification number, and the physician's name or use a computer-generated label. Print all information on the lab requisition form. This might include date, time, patient's name, address, identification number, physician's name and identification number, type or site of specimen, and test ordered. Make sure each specimen is in the correct specimen container or bottle. Check the lids on the containers to make sure they are closed securely. Send specimens to the laboratory as soon as possible. Pathologists will provide special containers for most health care facilities.
- Wear gloves to clean and sterilize all instruments and equipment. Put sharp objects such as the needle and syringe and scalpel blade (or disposable scalpel) in the sharps container immediately after use. Put contaminated disposable supplies in the infectious-waste container. Use a disinfectant to wipe any contaminated areas.
- Put all equipment in its correct place.
- Remove gloves and discard in an infectious-waste bag. Wash hands.
- Record all required information on the patient's chart or enter it into the electronic health record. For example: *date*, *time*, *surgical removal of tumor on right forearm*, *specimen sent to pathology laboratory*, *verbal and written postoperative instructions given to patient*, *and your signature and title*. Place a copy of any laboratory requisitions in the patient's chart. The physician sometimes records the required information.
- Precaution Because contamination from blood and body fluids is possible during minor surgical procedures, standard precautions must be observed at all times. Hands must be washed frequently, and gloves must be wiped with a disinfectant. Contaminated disposable supplies must be placed in an infectious-waste bag before disposal. Sharp objects such as scalpel blades (or disposable scalpels) and needles must be placed in a leakproof puncture-resistant sharps container immediately after use. The medical assistant must always be aware of and take steps to prevent the spread of infection.

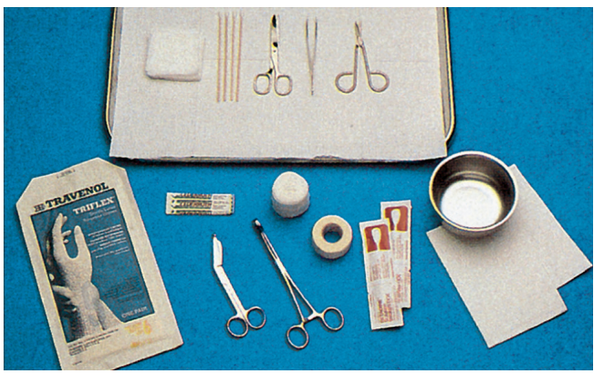


FIGURE 4–29 A sample suture removal tray setup.

FIGURE 4–30 A suture removal set consists of suture scissors and thumb forceps.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 197 14/06/2023 10:29

FIGURE 4–31A Use dressing forceps or wear sterile gloves to apply a sterile dressing to the site.

FIGURE 4–31B Anchor the dressing in place with roller gauze or tape.

SUTURE REMOVAL

Suture removal (removal of stitches) also requires that sterile technique be followed. Infection is an ever-present threat and must be prevented.

- Instruments and supplies (**Figure 4–29**) will vary according to the physician. The main instruments used for this procedure are suture scissors and thumb forceps. The two instruments are frequently packaged in sterilized, disposable kits called suture removal sets (**Figure 4–30**). The thumb forceps are used to grasp and hold the suture. It is compressed with the thumb and forefinger. The suture scissors have a curved blade that is inserted under the suture material so that the stitch can be cut and removed.
- When the sutures have been removed, place a clean dressing and bandages on the wound. Use dressing forceps or wear sterile gloves to apply a sterile dressing to the site (**Figure 4–31A**). Then apply roller gauze or tape to anchor the dressing in place (**Figure 4–31B**).
- Instruct the patient on wound care and provide written instructions if this is office policy. Watch closely for signs of distress. If no signs of weakness or dizziness are noted, help the patient get off the table.
- Wear gloves to clean and sterilize all instruments. If the suture set is disposable, place it in a sharps container.
- Put all contaminated disposable supplies in the infectious-waste bag. Use a disinfectant to wipe any contaminated areas.
- Remove gloves and discard in an infectious-waste bag. Wash your hands.
- Record all required information on the patient's chart or enter it into the electronic health record. For example: *date*, *time*, *sutures removed from right forearm*, *sterile dressing applied*, *and your signature and title*. The physician sometimes records the required information.

checkpoint

1. List four basic instruments or pieces of equipment that may be used for surgery or a procedure.
2. Is a sterile technique required for suture removal? Justify your answer.

وزارة التعليم
Ministry of Education
2016 - 1438
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 198 14/06/2023 10:29

4:6 RECORDING AND MOUNTING AN ECG

Science

To understand an ECG, it is essential to understand the electrical conduction pattern in the muscles of the heart (**Figure 4–32**). The contraction of the heart muscles is controlled by electrical impulses within the heart. The electrical impulse originates in the sinoatrial (SA) **node**, an area of heart muscle near the top of the right atrium. The impulse moves through the atria, causing the muscles of the atria to contract. The impulse next travels to the atrioventricular (AV) node, through a band of fibers called the bundle of His, and then through the right and left bundle branches to the final branches, called the Purkinje fibers. The Purkinje fibers distribute the impulse to the muscles of the right and left ventricles, which then contract.

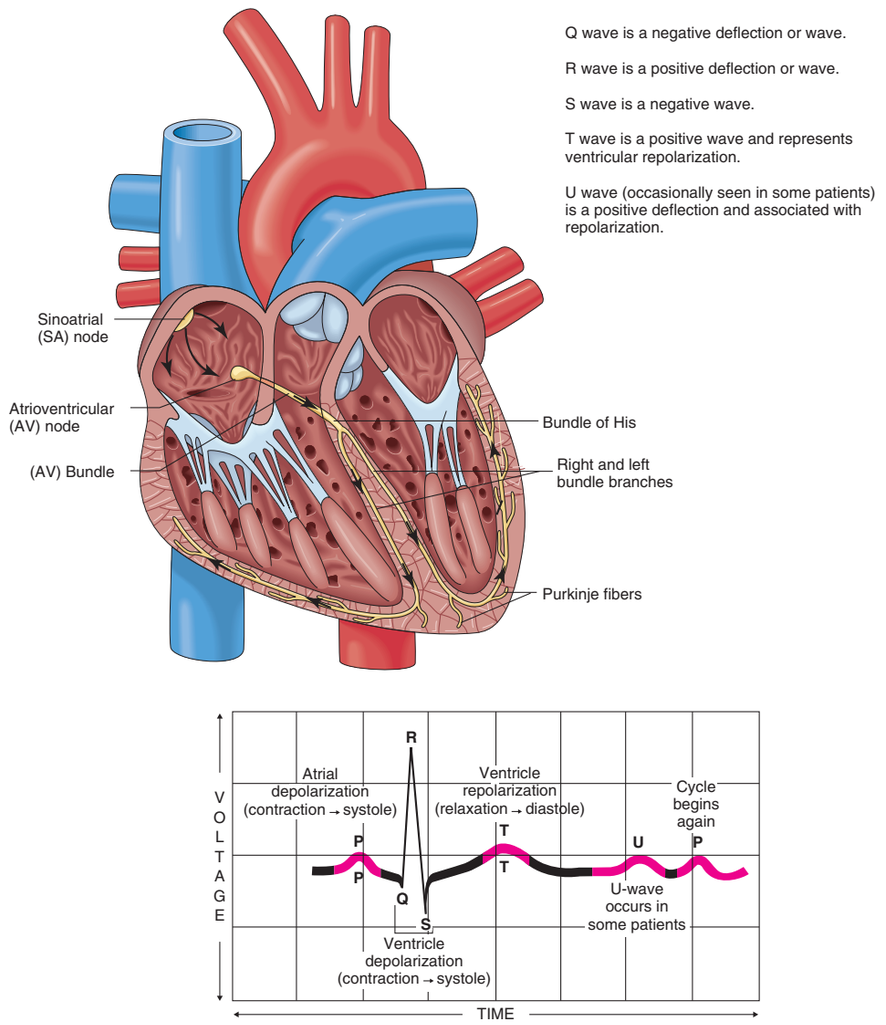


FIGURE 4–32 As the electrical impulse passes through the conduction pathway in the heart, it creates a pattern recorded as an electrocardiogram.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 199 14/06/2023 10:29

The movement of the electrical impulse is recorded by an electrocardiograph machine as a series of waves known as a PQRST complex:

- The **P wave** occurs as the impulse originates in the SA node and travels through the atria.
- The **QRS wave** represents the movement of the impulse through the AV node, bundle of His, bundle branches, and Purkinje fibers.
- The **T wave** represents the repolarization of the ventricles, or the period of recovery in the ventricles before another contraction occurs.

The pattern of electrical current in the heart is recorded by an electrocardiograph machine as an ECG. Each PQRST pattern represents the electrical activity that occurs during each contraction of the heart muscle, so each PQRST complex represents one heartbeat. Because an abnormal pattern of the electrical impulses will be evident on an ECG, the ECG can be used to diagnose disease or damage to the muscles of the heart.

Comm

Many patients are frightened or apprehensive about having an ECG taken. It is important to explain this procedure to the patient. Stress that it is not a painful or uncomfortable test. Position the patient comfortably with all body parts supported. Encourage the patient to relax and to avoid moving while the ECG is being taken. Muscle movement can cause electrical interference and will be displayed on the ECG recording. Nervous tension can also interfere with the recording.

RECORDING AN ECG

Using special electrodes, the electrical activity is recorded from different angles, called leads. The different leads give the physician a more complete picture of the heart. By noting an electrical disturbance in any of the leads, the physician can determine which parts of the heart are diseased or malfunctioning.

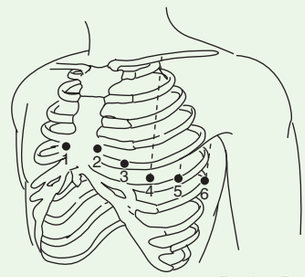
A complete ECG normally consists of 12 leads. Electrodes are placed at specific locations on the body to pick up the voltage present. Connections between the various electrodes create the various leads. There are three classifications: standard, augmented, and chest leads (**Figure 4–33**).

- **Standard**, or **limb**, leads include leads 1 (I), 2 (II), and 3 (III) (**Figure 4–34**). Each records the voltage between two extremities.
- **Augmented voltage** leads (see **Figure 4–34**) are different angles of the standard leads. “aVR” stands for “augmented voltage right arm”, “aVL” stands for “augmented voltage left arm”, and “aVF” stands for “augmented voltage left foot”.

وزارة التعليم
Ministry of Education
2016 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 200 14/06/2023 10:29

Standard or bipolar limb leads	Electrodes connected	Marking code
Lead I	RA & LA	1 dot
Lead II	RA & LL	2 dots
Lead III	LA & LL	3 dots
Augmented unipolar limb leads		
aVR	RA & (LA-LL)	1 dash
aVL	LA & (RA-LL)	2 dashes
aVF	LL & (RA-LA)	3 dashes
Chest or precordial leads		
V	C & (LA-RA-LL)	(See data on right)

Recommended positions for multiple chest leads
(Line art illustration of chest positions)



Dash—Dot

V_1 Fourth intercostal space at right margin of sternum
V_2 Fourth intercostal space at left margin of sternum
V_3 Midway between position 2 and position 4
V_4 Fifth intercostal space at junction of left midclavicular line
V_5 At horizontal level of position 4 at left anterior axillary line
V_6 At horizontal level of position 4 at left midaxillary line

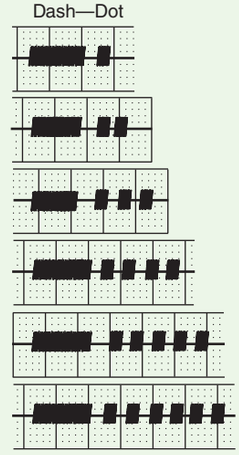


FIGURE 4–33 The lead arrangement and coding for a standard electrocardiogram.

- The six **chest**, or **precordial**, leads record angles of the electrical impulse from a central point within the heart to specific sites on the front of the chest (see **Figure 4–34**). Chest electrodes are placed at six specific locations on the chest to obtain these angles (see **Figure 4–33**):
  - V_1: fourth intercostal (between ribs) space on the right side of the sternum (breastbone).
  - V_2: fourth intercostal space on the left side of the sternum.
  - V_3: midway between the V_2 and V_4 positions.
  - V_4: fifth intercostal space at the junction of the midclavicular line (line drawn from the middle of the clavicle).
  - V_5: same level as 4 but at left anterior axillary line.
  - V_6: same level as 4 but at left midaxillary line.

Disposable electrodes are placed on various parts of the body to record these 12 leads. The leads have an alligator clip to attach them to the electrodes (**Figure 4–35**). The leads are coded so that each is put in the proper place:

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 201 14/06/2023 10:29

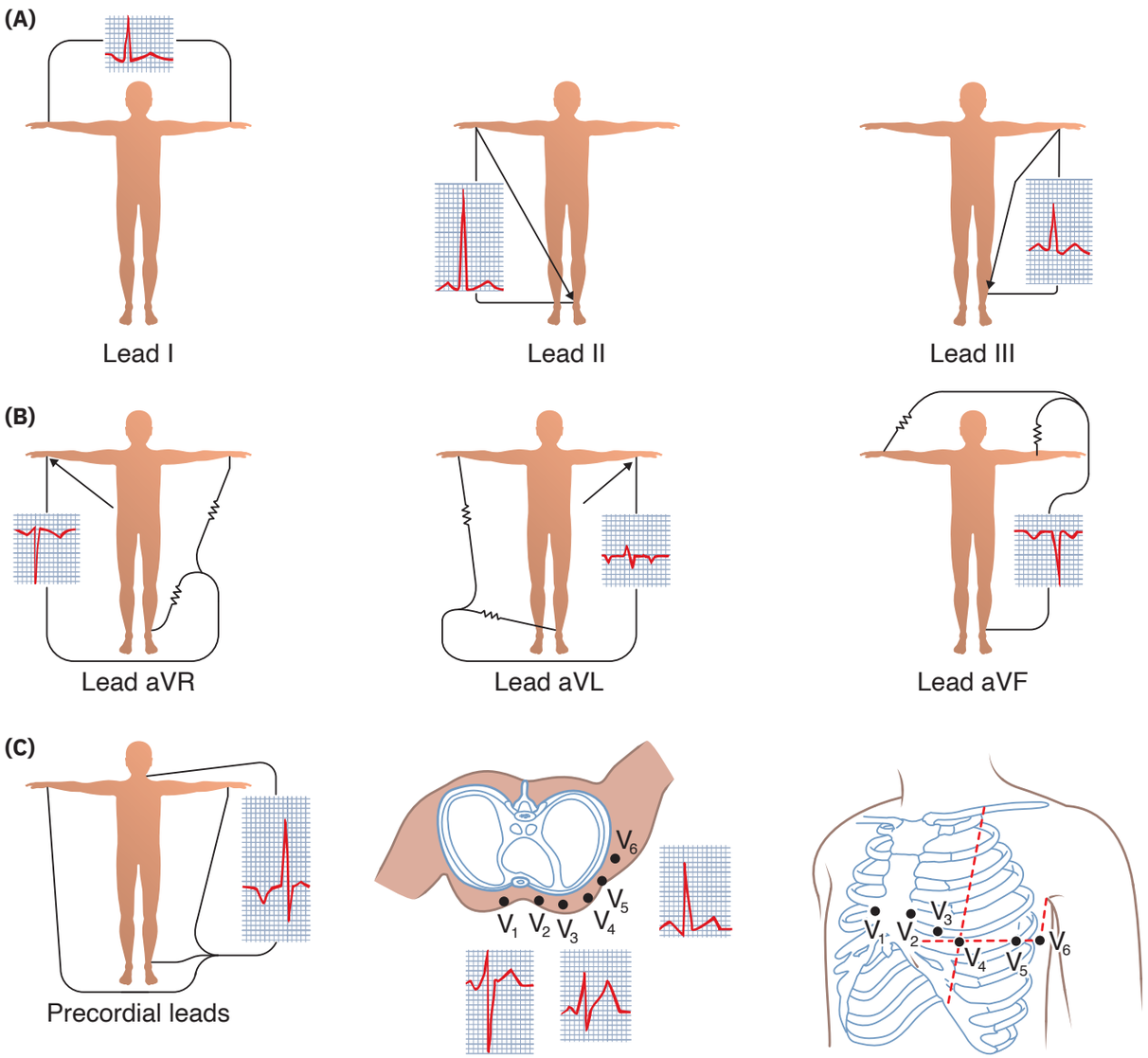


FIGURE 4–34 Lead types, connections, and placement. (**A**) Standard limb leads. (**B**) Augmented voltage (aV) leads. (**C**) Precordial or chest leads.

FIGURE 4–35 An alligator clip on the end of the electrocardiograph cable wire attaches to the disposable electrode.

- "RA" for "right arm"; placed on the fleshy outer area of the upper part of the right arm.
- "LA" for "left arm"; placed on the fleshy outer area of the upper part of the left arm.
- "RL" for "right leg"; placed on the fleshy part of the lower right leg; does not record a lead but serves as a ground for electrical interference.
- "LL" for "left leg"; placed on the fleshy part of the lower left leg.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 202 14/06/2023 10:29

- "C" or "V" for "chest"; placed at six different locations on the chest (see **Figure 4–33**).

The lead wires should follow body contour (**Figures 4–36A** and **4–36B**). If there is excess wire, coil it in a loop and fasten with tape or a band. Pay particular attention to the labels and color codes to connect the cable ends to the correct electrodes. Make sure all connections are tight and in the same direction.

Electrocardiograph machines vary slightly, but most have the same basic parts. It is important to read the specific manufacturer's instructions with each machine. There are two main classes of electrocardiographs: single-channel and multiple-channel. The single-channel electrocardiograph produces a narrow strip of paper showing one lead at a time. Most facilities use a multiple-channel electrocardiograph that produces a full sheet of paper showing all 12 leads, with each lead labeled with its name (**Figure 4–37**).

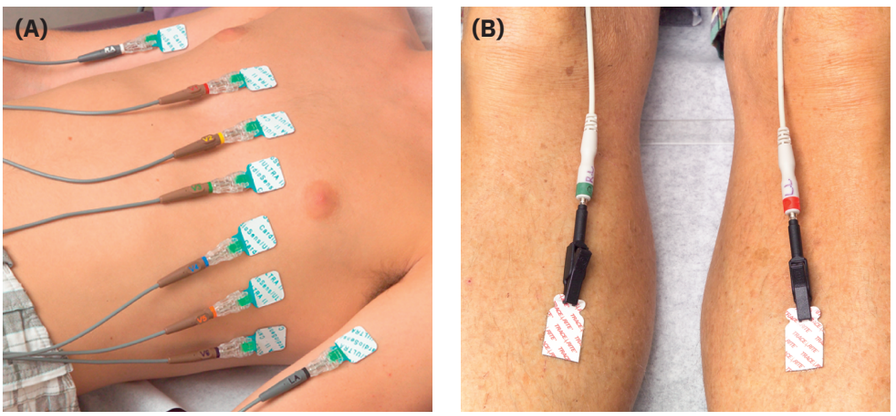


FIGURE 4–36 The lead wires should follow body contour when they are connected to the electrodes: (**A**) chest and arm leads; (**B**) leg leads.

FIGURE 4–37 A multiple-channel electrocardiograph produces a full sheet of paper showing all 12 leads.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 203 14/06/2023 10:29

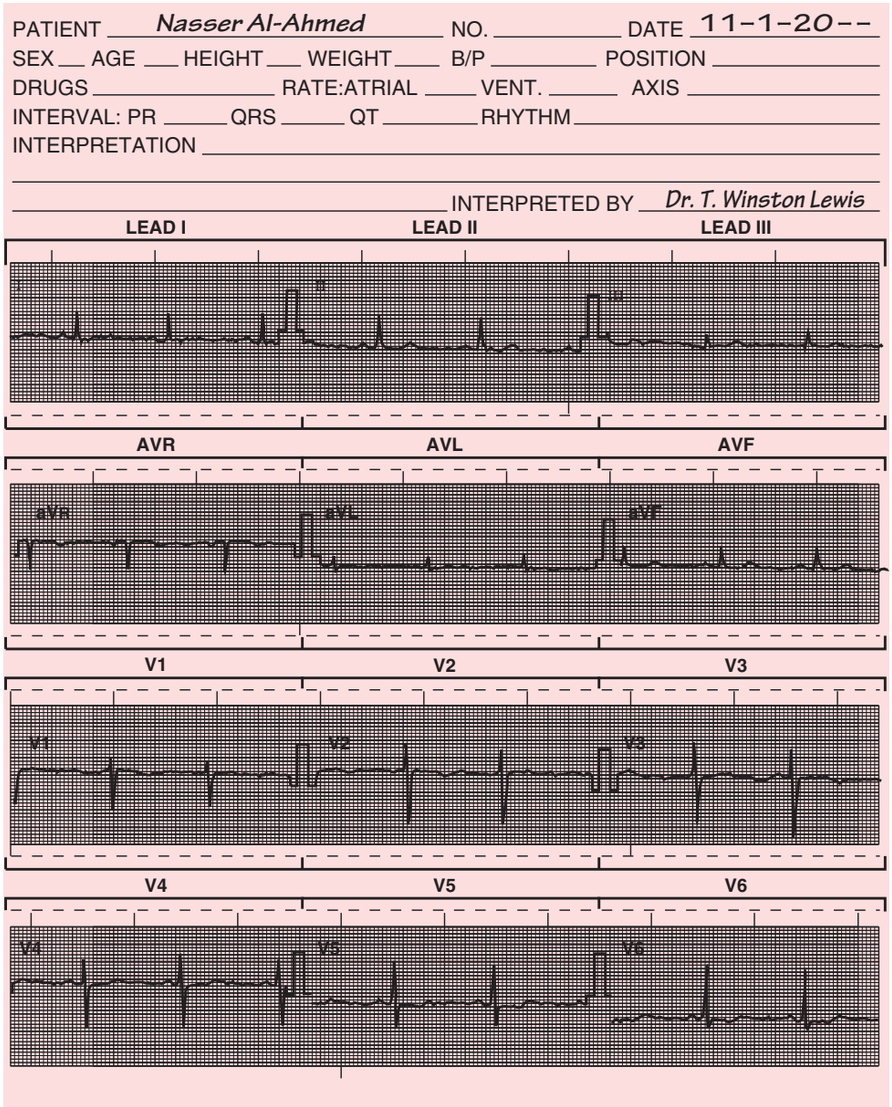


FIGURE 4–38 A mounted ECG.

MOUNTING AN ECG

After all the ECG leads have been recorded, a section of each recorded lead is mounted. Multiple-channel machines produce complete mounts. These mounts are sometimes attached to firmer backings using self-stick tape. The final mount should be neat, with each lead in the correct area on the mount. The mount should be labeled with the patient's name and address, physician's name, date, and any other pertinent information (**Figure 4–38**).

Computerized ECG machines will retain the ECG in the computer memory so it can be viewed on the screen. Most computerized ECG machines will also provide a printed copy of an ECG. Follow the manufacturer's instructions to save the ECG correctly in the patient's electronic health record.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 204 14/06/2023 10:29

checkpoint

1. What node does the electrical pulse of the heart originate from? Where is that node located?
2. What are the two main classes of electrocardiographs?

4:7 WORKING WITH MEDICATIONS

A medication is a drug used to treat or prevent a disease or condition. The following discussion provides only basic information about the preparation and administration of medications. Even so, it should make you aware of the need for extreme care in handling all medications. It is important to remember that only authorized persons can administer medications. Medications are available in various forms, usually liquids, solids, or semi-solids.

- **Liquids:**
  - Aqueous suspension: A medication dissolved in water.
  - Suspension: The solid form of a medication is mixed with a solution. Usually, it must be shaken well before use to resuspend the medication in the solution.
  - Syrup: A concentrated solution of sugar, water, and medication.
  - Tincture: A medication dissolved in alcohol.
  - Precaution Liquid medications must be poured at eye level to ensure that the dosage is exact (**Figure 4–39**).

- **Solids (Figure 4–40):**
  - Capsule: A gelatin-like shell with medication inside.
  - Pill: A powdered medication mixed with a cohesive substance and molded into shape.
  - Tablet: Compressed or molded preparation.
  - Troche or lozenge: A large, flat disc that is dissolved in the mouth.
  - Enteric coated: A medication with a special coating that does not dissolve until the substance reaches the small intestine.

FIGURE 4–39 Liquid medications must be poured at eye level to ensure that the dosage is exact.

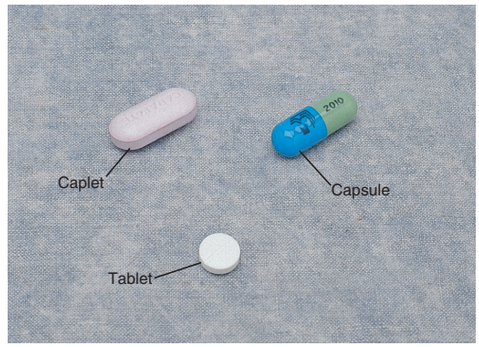


FIGURE 4–40 Types of solid medications.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 205 14/06/2023 10:29

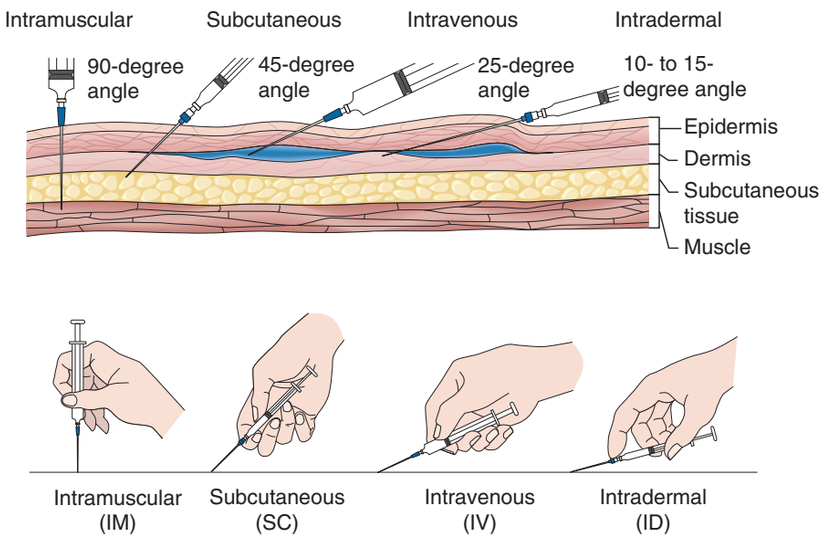


FIGURE 4–41 Types of injections and the correct angles for administration of parenteral medications.

- **Semi-solids:**
  - Ointment: A medication in a fatty base.
  - Paste: Ointment with an adhesive substance.
  - Cream: A medication with a water-soluble base.
  - Suppository: A cone-shaped object that usually has a base material of cocoa butter or glycerin mixed with the medication. It is usually inserted into the rectum, where it melts as a result of body heat and dispenses the medication. It is used rectally to stimulate peristalsis and aid in expelling feces, relieve pain, decrease body temperature (aspirin suppositories), and stop vomiting (antiemetics).

Medications may be given in a variety of ways. Some of the routes of administration are:

- **Oral:** Given by mouth; for liquid and solid forms.
- **Rectal:** Given in the rectum; liquids and suppositories.
- **Injection:** Given with a needle and syringe. It is often called parenteral, which means any route other than the alimentary canal (digestive tract) (**Figure 4–41**). Routes for injection are:
  - Subcutaneous (SQ): Injected into the layer of tissue just under the skin.
  - Intramuscular (IM): Injected into a muscle.
  - Intravenous (IV): Injected into a vein.
  - Intradermal: Injected just under the top layer of the skin. The skin tests for allergies and tuberculosis are examples.

وزارة التعليم
Ministry of Education
2016 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 206 14/06/2023 10:29

- **Topical (or local):** Applied directly to the top of the skin.
  - Ointments, sprays, liquids, and adhesive patches.
  - Transdermal adhesive patches applied to the skin can be used to provide a continuous dosage of medication for motion sickness, heart disease, hormonal imbalance, and nicotine withdrawal (for individuals who are trying to stop smoking) (**Figures 4–42A** and **4–42B**).
- **Inhalation:** Inhaled, or breathed in, by way of sprays, inhalers, or special machines.
- **Sublingual:** Given under the tongue.

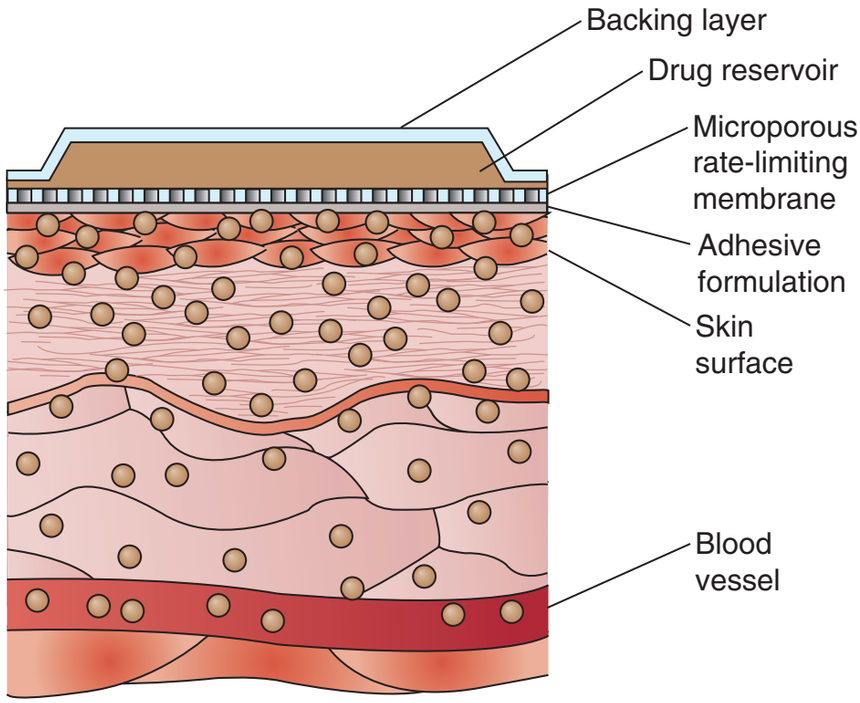


FIGURE 4–42A The layers of a transdermal patch allow the medication to be absorbed into the bloodstream over a period of time, frequently 24 hours.

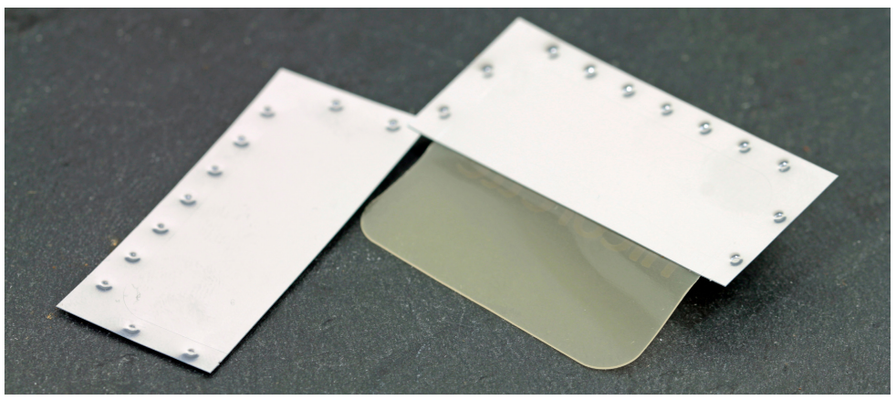


FIGURE 4–42B A transdermal patch.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 207 14/06/2023 10:29

SOURCES OF INFORMATION

Before administering any medication, it is essential to check for complete information about the medication. When you are looking for information, it is important to know that drugs have two names: a **generic** name and a **proprietary** (trade or brand) name. The same generic medicine can have several different brand names, which may be different in different countries. For example, the generic analgesic aspirin (acetyl salicylic acid) has many trade names, such as Anadin, Fevadol, Disprin, and Ecotrin, as it is manufactured by different companies in many countries. Some useful sources of accurate information about drugs include:

- The Saudi Arabia Ministry of Health (MOH) Drug Formulary, which is divided into three sections:
  - A directory of policies, guidelines, and medical supplies.
  - A listing of all medications approved for use in MOH hospitals.
  - An appendix of approved abbreviations, MOH forms, and indexes.
- The MOH Drugh Formulary is available as an app for Smartphone users), which delivers frequently updated information on over 1,500 generic and over 2,000 branded medicines.
- The Saudi Food and Drug Authority (*www.sfda.gov.sa*) provides lists of drugs that are available in Saudi Arabia and internationally, drugs being studied, pharmacies, safety alerts, and much more.
- In addition to websites, the packet inserts provided in medication packages also provide valuable information.
- The Sehhaty Platform allows users to access information about medications and health services in Saudi Arabia (https://www.moh.gov.sa/en/eservices/sehhaty/pages/default.asp).

INFORMATION NEEDED BEFORE ADMINISTERING A DRUG

Information that must be obtained from a reliable source about any medication or drug before administering the drug includes the following:

- **Action of the drug:** Tells how the drug works and what it should do.
- **Uses of the drug:** Provides all approved reasons why the drug is used to treat specific conditions, and also frequently provides information on conditions that the drug treats that are unlabeled uses.
- **Availability or how supplied:** Lists all forms of the drug, or routes of administration, such as capsules, pills, injectables, or liquids.

وزارة التعليم
Ministry of Education
2026 - 1448

- **Dosage:** Indicates correct dose (the specific amount of medication taken at one time) for each form of the medication and for the specific condition for which it is being used; how to take the medication as prescribed (a specific amount, number, and frequency of doses over a specific period); categorizes the dosages according to the age of the person taking the drug.
- **Administration:** Provides information on correct storage, special precautions such as capsules not being chewed or crushed, taking the medication with food, drinking large amounts of fluid with medication, and similar factors.
- **Adverse effects (or side effects):** Indicates all effects other than those intended that may be experienced, from minor to major.
- **Contraindications:** Lists diseases or reasons why the medication should not be taken.
- **Cautions for use:** Emphasizes times it may be dangerous to administer this medication.
- **Interactions:** Provides a list of other medications that may interact with this drug and how its use would interfere with the action of other medications or decrease in effectiveness.

There are six main points to watch each time a medication is given. These can be called the "six rights":

- Right medication.
- Right dose or amount.
- Right patient.
- Right time.
- Right method or mode of administration.
- Right documentation.

SAFETY

Certain safety rules must be observed when giving medication.

- Read the order carefully. Note all "six rights".
- Check for patient allergies before administering any medication.
- Check the label at least three times to be sure it is the correct medication (**Figure 4–43**). The label must be read when the bottle is taken from the shelf, as the medication is poured, and when the bottle is replaced on the shelf.
- Prepare or administer a medication only on the order of a physician.
- Never administer a medication that you did not personally prepare.

وزارة التعليم
Ministry of Education
2026 - 1448

FIGURE 4–43 Check the label of any medication at least three times.

- Know the action of the drug, the usual dosage, the route of administration, and the adverse effects.
- Store medications in a safe, cool, dry area. Make sure they are out of the reach of children.
- Check expiration dates on all medications. Medications must never be used beyond the expiration date, and expired medications must be destroyed. Record all required information regarding the destruction of the medication according to agency policy.
- Never use medication from an unmarked bottle. Make sure the label is clear. If in doubt, throw it out.
- Do not return any medication to a bottle. This can lead to serious errors. Discard any medication that is not used.
- Report all mistakes immediately.
- Concentrate while handling any medication. Avoid distractions.

Math

Use a calculator or paper and pencil to calculate dosages. Avoid "mental" math because it can cause errors.

Legal

Only legally authorized health care providers can administer medications. Administering medications is a major responsibility and every effort must be made to make sure the correct drug and dosage is given to the patient. Always use the literature that comes with each medication to learn the basic information about the medication. Question dosages or uses that do not seem correct. It is your responsibility to determine what you are legally permitted to do.

وزارة التعليم
Ministry of Education
2016 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 210 14/06/2023 10:29

checkpoint

1. List the four routes for injections.
2. What are the "six rights"?

Today's Research — Tomorrow's Health Care

The Nose Knows Cancer?

Even though treatment for cancer has improved and many lives have been saved, some types of cancers are extremely difficult to detect at an early stage when a cure is most likely. Examples include stomach, bone, kidney, pancreatic, and ovarian cancers.

Scientists all over the world are researching the possibility of a "smell test" for cancer using dogs. Initially, researchers in California trained five different dogs to smell breast and lung cancer on a patient's breath. Since then, dogs have been used to identify breast cancer, lung cancer, colorectal cancer, and prostate cancer with accuracy rates approaching 100% (**Figure 4–44**). Researchers think the dogs were able to smell the cancers by sensing minute amounts of volatile organic compounds (VOCs) that are end products of metabolism, which are excreted in breath, urine, and feces. Some researchers are isolating polyamines, molecules linked to cell growth and differentiation, because cancer raises polyamine levels and they have a distinct odor. Estimates are that a dog's sense of smell can be 10,000 to 100,000 times superior to a human's sense of smell, so the dogs can detect minute quantities of the VOCs.

Currently, many researchers are working to identify and isolate the chemical compounds associated with different types of cancers. This is very challenging because the smell of cancer is probably made up of many different chemicals. In fact, each type of cancer might have a unique chemical combination. At the same time, researchers are trying to develop artificial noses that will be able to detect specific chemical compounds. Recently, several electronic noses (e-noses) have been produced and are being used in trial studies. Initial studies have had some success. One e-nose was able to distinguish between lung cancer patients and high-risk smoking patients without cancer 80% of the time. Another model was able to identify prostate cancer from the scent of urine 78% of the time. A third e-nose checking fecal gas identified 73–85% of patients with colorectal cancer. Once the compounds associated with cancer are identified, it may be possible to modify the e-nose to detect them by inserting sensors to detect the specific compounds. Eventually, it is very possible that a simple noninvasive test using scents from breathing, urine, feces, and even blood could lead to early detection of cancer. This research could save many lives.

FIGURE 4–44 Dogs have been used to identify different types of cancer with accuracy rates approaching 100%.

Case Study Investigation Conclusion

What skills should Abdullah and Noura have to be a part of the health care team at the clinic? If Abdullah is unfamiliar with a procedure or skill, what should he do? How can Noura help him?

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 211 14/06/2023 10:29

CHAPTER 4 SUMMARY

- A basic knowledge of the main skills used by medical assistants is beneficial for many health care providers because many of these skills are used in other health care areas.
- Height and weight measurements are important in evaluating basic health status of patients. Thus, knowing how to correctly measure height and weight is important for every health care provider.
- By following correct positioning techniques, the medical assistant can properly prepare patients for examinations, as well as provide patients with comfort and privacy.
- A knowledge of the basic instruments used and procedures performed during physical examinations, minor surgery, and suture removal allows the medical assistant to work with the physician to provide quality health care.
- Understanding the basic principles of electrocardiography allows the medical assistant to efficiently record an ECG.
- A knowledge of how to find information on medications and of correct techniques for dispensing medications is also an important responsibility of the medical assistant.

Mini Case 4:1 An Inadvertent Error

Fatima is a medical assistant working in the hospital. Her task today is to take patients' vital signs. When she gets to Sara, she discovers that she has a temperature of 37.6°C. When she checks the orders, she finds that the physician has ordered paracetamol to be given every four hours as needed for a temperature above 38°C. Fatima notes that it is now 4 p.m. and the last dose was given at 1 p.m. The paracetamol tablets she has available are marked as 525 mg/tablet. She gives the patient two tablets and charts the time given as 15:00 hours. When Fatima's supervisor checks Sara's chart, she realises that Fatima has made a mistake and calls her over to discuss it. Fatima did not realize that she had made a mistake, so she is disappointed in herself when her supervisor points out the error. Fatima is very worried that Sara might come to harm from her actions.

analysis

1. Fatima seems to have confused several measures. Assuming the last dose was given at 1 p.m., when would the next dose of paracetamol be due according to the doctor's orders? If it is now 4 p.m., how much time has elapsed since the medication was given? Did Fatima note the time correctly? If not, how is 4 p.m. expressed in hours on a 24-hour clock?

2. Was Sara's temperature high enough for more paracetamol to be given? What do you think Fatima should have done when she finished reading the doctor's orders?

3. What should the supervisor tell Fatima? How should Fatima respond?

وزارة التعليم
Ministry of Education
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 212 14/06/2023 10:29

Mini Case 4:2 A Physical Examination

Khalid is a medical assistant working with Mohammed, a physician in the general medical department. Hamad is a new patient. Mohammed needs to give Hamad a complete physical examination to find out more about the abdominal pain he is suffering. Khalid has been asked to prepare Hamad for the examination and to assist during the examination.

analysis

1. What should Khalid explain to Hamad about how the examination will be carried out?

2. How does Khalid need to prepare himself and Hamad for the examination?

3. After the examination, Hamad asks Khalid what he thinks is wrong with him. How should Khalid respond? Why?

Mini Case 4:3 A Surgical Procedure

Lina is 23 years of age. She has come to the minor surgery clinic at the hospital to have a benign tumor removed from her arm under local anesthetic. Asma, the medical assistant, has been asked to prepare her for the surgery. Lina has never been in hospital before and tells Asma that she is worried about what will happen. She wants to know if it will hurt and if the equipment is scary.

analysis

1. What can Asma tell Lina about the procedure and what questions should she refer to the surgeon?

2. How can Asma reassure Lina to allay her fears about the procedure?

3. After the procedure, how should Asma help Lina?

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 213 14/06/2023 10:29

REVIEW QUESTIONS

1. Why are height and weight measurements important?

2. Identify at least six different positions that can be used for examinations and/or treatments. For each position, give one reason for using the position.

3. Define myopia and hyperopia and describe the difference between the two conditions.

وزارة التعليم
Ministry of Education
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 214 14/06/2023 10:29

4. What place does observation have in a general physical examination?

5. What is auscultation?

6. Explain four standard precautions that must be observed while assisting with minor surgery or suture removal.

7. What is the difference between a hemostat and a needle holder? What is the function of each instrument?

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 215 14/06/2023 10:29

8. Name the three classifications of leads used in an electrocardiogram. What does each one record?

9. What information should be obtained before administering any medication?

10. Describe the following routes of administration for medications: topical, sublingual, intravenous, oral, inhalation.

وزارة التعليم
Ministry of Education
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 216 14/06/2023 10:29

CRITICAL THINKING

1. Use reliable internet sources to find the medication celecoxib. List the main action of this drug, suggested dosage, route of administration, and warnings/adverse effects. Create a patient information brochure for this drug.

2. Why is it important to consider the safety aspects of giving medication? What risks are there in administering medicines?

ACTIVITIES

1. **a.** In a group of four, create a script for the following scenario: Maha brought her baby girl, Lama, to the doctor's office for her 6-week check-up. She also brought her two other children, Youssef and Mohammed, because they have a headache and fever. Sarah is the medical assistant at the clinic. She calls the family and checks them in. She obtains and records all measurements and their chief complaints. The doctor looks in both boys' and Lama's ears and orders an immunization update for everyone, and antibiotics for Youssef and Mohammed.

   b. In the same group, role play the script. Modify the scenario by making the boys combative and not wanting to stand still for an injection.

2. Working with another student, use a CPR (cardiopulmonary resuscitation) manikin to demonstrate the correct placement of a 12-lead ECG, or sketch the information on a piece of paper.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 217 14/06/2023 10:29

Link to digital lesson

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CHAPTER

5

BUSINESS AND ACCOUNTING SKILLS

Case Study Investigation

Khalid has been a file clerk for a doctor's practice for the last four years. The practice has ten doctors. He is quite good at his job. Khalid got coronavirus and was out sick for two weeks. When he returned, files were piled everywhere! Fahad is normally a scheduler but was assigned to work together with Khalid to help him catch up with the filing and to show him how to schedule. At the end of this chapter, you will be asked to list the skills that Fahad will need to file accurately, and the talents Khalid will need to schedule patients.

LEARNING OBJECTIVES

After completing this chapter, you should be able to:

- File records using both the alphabetical and numerical systems.
- Follow correct telephone techniques when using a business telephone.
- Schedule appointments using a standard appointment ledger or a computer program.
- Complete registration and history records.
- Compose and print letters of consultation, collection, appointment, recall, and inquiry.
- Complete basic insurance forms accurately, neatly, and thoroughly.
- Maintain a bookkeeping system.

KEY TERMS

answering service
automated routing unit
bookkeeping
buffer period
electronic health record (EHR)
filing
International Classification of Diseases
medical history
paging system
patient portal
triage
voicemail

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Ministry of Education
1445 - 1448

5:1 FILING RECORDS

Filing is the systematic or orderly arrangement of papers, cards, or other materials so that they are readily available for future reference. Correct filing methods for health care records and other information are necessary for two main reasons. First, it must be possible to quickly locate the material when it is needed. Second, the material must be stored safely and protected as legal records. Various filing systems are in use.

FILING SYSTEMS

The most common system is to file numerically by unique identity number. Materials to be filed, such as names, are each assigned a number. The numbers are then placed in order and filed according to numerical order. The patient's name is placed on the index card or entered into the computer database along with the assigned number. The patient's file is then located in the numerical file. If patients have the same name, the numerical system can eliminate errors because each patient has their own unique number. Using only numbers on the outside of a chart also helps to protect a patient from identity theft if an unauthorized person should happen to see the chart.

COLOR-CODED FILING SYSTEMS

Colors provide a second means of verifying placement of folders in the file. Because a file with different color coding will stand out, a quick glance at the folders allows the person filing to immediately locate a file that is out of place. Color-coded folder systems are frequently used in larger agencies. This system uses different colored file folders (**Figure 5–1**). Some examples of color-coded folder systems include:

- **Coded by physician:** A health care agency may have several doctors. Each doctor's patients have a different color file folder. One doctor's patients have yellow file folders, a second doctor's patients have green file folders, and a third doctor's patients have red file folders.
- **Coded by type of insurance:** Each type of medical insurance has its own unique color of file folder.

FIGURE 5–1 A color-coded folder system uses different colored file folders.

وزارة التعليم
Ministry of Education
2026 - 1448

GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 219 14/06/2023 10:30

STORAGE OF FILES

An efficient filing system is an important part of any health care agency. Most health care facilities use electronic databases to store information, although some facilities may still use a manual filing system. Electronic patient health records are the most efficient for storing information.

In a manual system, records are stored in file folders and the folders are stored in filing cabinets or shelves. File folders must be durable and of good quality. Filing cabinets or shelves must be conveniently located, fireproof, and equipped with locks. Sufficient file space must be available so that records are not packed tightly in the filing cabinets or shelves.

Because thousands of records can accumulate in a busy agency, most facilities have a policy to classify records as active, inactive, or closed. An active record is one that is currently being used because the patient is being seen by the agency. An inactive record is a record for a patient who has not been seen for a number of years. A closed record is usually a record for a patient who has died, transferred to another physician or facility, or a file that is no longer required.

There may be different time requirements for retaining records. Most health care agencies keep all records in case they are needed for legal or research purposes. Inactive or closed records are frequently scanned and saved on an external hard drive or in a secure cloud or off-site server. The record can then be retrieved and displayed on the computer or printed in hard copy form if it is needed. It is important to note that the original record must be destroyed by shredding or burning to protect the confidentiality of the patient.

ELECTRONIC HEALTH RECORDS

Technology

The Kingdom is a world-leading country for digital health. The Seha Virtual Hospital, for example,brings together over 220 hospitals to enable virtual consultations and remote surgeries. An essential element of this system is the electronic patient record.

In an electronic filing system, agencies use computers and "paperless" files. The files are called **electronic health records (EHRs)**. A database is created with the name, address, and case number of the patient. The database will automatically file all patient ID numbers and names in the correct order. When the patient arrives at the agency, the patient's ID number is entered into the computer and the database information with the ID number appears. Some computer programs will retrieve the patient's file by name but most will require the ID number.

Once the file is retrieved, a printout can be obtained with pertinent information, or the health care provider can use a laptop computer or tablet to view and record information while providing care to the patient. When the health care provider sees the patient, current information is entered into the computerized patient file. This information can be stored on an external hard drive or in a secure cloud/off-site server so it can be retrieved when needed. Backup copies must be made frequently when an

وزارة التعليم
Ministry of Education
2026 - 1448

electronic system is used, because if the computer fails, or the hard drive crashes, all information would be lost. Most offices using an electronic system have automatic backups scheduled on a continuous, an hourly, or a daily basis to prevent losing information.

Maintaining the confidentiality of patients' records is also essential when an electronic system is used. Passwords, firewalls, limiting access to specific people, and using secure clouds or off-site servers are methods used to prevent access to the records by unauthorized individuals.

Saudi Arabia has developed the Unified Health File, which is a digital health platform providing up to date information for patients, showing history and type of disease and medicines dispensed, any medical insurance, laboratory testing results, vaccinations, and referrals. The system also contributes to unifying medical records to improve the quality of health care and patient safety. The system is available to all Saudi citizens and residents. Each person has a "national profile" in the system, which records medical information such as allergies, blood type, chronic diseases, height, weight, body mass index, and also any appointments or referrals, laboratory or radiology results, prescriptions, sick leave, or vaccinations. Some basic medical information can be viewed using the "Sehaty" smartphone application.

checkpoint

1. What is an active record?
2. What is the Unified Health File?

5:2 USING THE TELEPHONE

BASIC TELEPHONE TECHNIQUES

Comm

The telephone is an important tool of public relations in any health agency. Because you create an impression every time you talk on the telephone, it is important that you use correct techniques.

Correct use of the telephone requires many different skills. The impression you create on the telephone will influence a patient or other caller. It is essential to be tactful, diplomatic, firm yet flexible, friendly yet professional, and courteous. You must be capable of making decisions and be willing to accept responsibility. Developing the correct tone of voice is essential. Your voice must be pleasant, low pitched, clear, and distinct. A monotone or indifferent tone should be avoided. Words must be pronounced correctly. Correct grammar should be used at all times. Courtesy and good manners must be used during the entire conversation. Remember to use the words "please" and "thank you".

Always answer the telephone promptly (**Figure 5–2**). In addition, answer with a smile; doing so helps create a pleasant voice. Even though callers will not see the smile, they will be able to detect it in your voice.

وزارة التعليم
Ministry of Education
2026 - 1448

FIGURE 5–2 Answer the telephone promptly.

Identify the office or agency—and in most cases, yourself—when you answer the phone. For example, do not say "Hello," "Yes," or even just "Good morning," when answering. Use greetings such as "Good morning, Dr. Al-Ali's office," "Hello, Health Care Hospital, Maha speaking," or "Respiratory Clinic, Maha speaking. How may I help you?" In this way, callers know that they have reached the correct party.

In many agencies, it will be the responsibility of the receptionist to screen calls. This means that you must determine which calls should be referred to the doctor or other appropriate person, and which calls can be handled by you or another worker in the agency. Each agency usually has some policy regarding calls. For example, in some offices, calls from the doctor's immediate family (that is, wife or husband and children) and calls from other professionals are put through to the doctor. Other calls are screened to determine whether they are emergencies or whether the caller really must speak with the doctor. Experience in screening calls will help you make appropriate decisions.

To screen calls, you must first obtain specific information, including:

- **Name of the caller:** To determine the name of the caller, you should avoid statements, such as "Who is this?" or "Who are you?" It is better to say, "May I have your name, please?" or "May I ask who is calling, please?"
- **ID or patient number:** You will also need to request the caller's ID or patient number. This will ensure that the correct records are retrieved.
- **Birthdate:** Most offices ask for the date of birth of a patient to help to verify the identity of the person calling.
- **Nature or purpose of the call:** When patients call a health care facility, they often simply ask to talk with a particular person. By asking, "May I help you?" or "May I tell Dr. Ibrahim why you are calling?" you can usually determine the nature of the call. At times you may have to say, "Dr. Asma is with a patient at this time, may I take a message?" or "The therapist is not available at present, would you explain your problem to me so I can determine if someone else can assist you?"

Emergency calls must be evaluated. In some cases, a patient is upset and there is really no emergency. Most health care agencies establish a telephone **triage** procedure to deal

وزارة التعليم
Ministry of Education
2016 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 222 14/06/2023 10:30

with emergency calls. Triage is the process of evaluating the situation and prioritizing treatment. A list of questions is often kept by the telephone and used to assist in evaluating the situation. For example, the following questions may be used depending on the situation:

- Who is the patient?
- What happened? When did it happen?
- Is the patient breathing? Conscious? Bleeding?
- Is it possible the patient took or contacted a poison? If so, what, when, and how much?
- Have you called emergency medical services?

By asking pertinent questions and remaining calm, you may be able to recognize real emergencies. Most emergencies are referred to the appropriate person if they are available. If the appropriate person is not available, obtain important information so that you can help the caller obtain help from the correct source. It may be necessary to refer the patient to an emergency medical service, emergency room, or hospital. A list of emergency numbers should be readily available so the correct number can be provided to the caller. Most agencies have procedures to follow when appropriate people are not available during emergencies.

Telephone triage can also be used to determine how quickly a patient should be scheduled for an appointment. Specific questions will help provide information on the seriousness of the patient's condition. Questions that might be asked include:

- What symptoms are you experiencing?
- How long have you had the symptoms?
- Do you have a fever or elevated temperature?
- Are you having any difficulty in breathing?
- Are you in pain? Where? How severe?

Evaluating a patient's responses will allow you to determine whether the patient should be seen immediately or can be scheduled at the next convenient appointment time. Never hesitate to ask others for advice if you are not certain about the seriousness of the patient's condition.

Use discretion at all times when using the telephone. You should not say, "The doctor is having coffee down the hall," "He isn't in yet and I don't know where he is," or similar comments. Statements such as, "He is not available at present," or "I expect her to return at four o'clock; may I take a message?" are more appropriate.

Before ending any telephone conversation, repeat important information to the caller. For example, say, "Your appointment is scheduled for 10:00am

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 223 14/06/2023 10:30

on 10th Rajab," or "The doctor will return your call after 4pm today." At the end of a conversation, always close with, "Thank you for calling. Goodbye," and end the call gently. If possible, allow the caller to hang up first. If you hang up first, you might miss something the patient wanted to say.

In most agencies, written notes are made of any calls that require action. These notes can be handwritten or entered into a computer database or into the patient's EHR. In other agencies, telephone logs are kept, and every call is recorded. The log must be accurate. Telephone messages should always contain the following information (**Figure 5–3A**):

- **Name of the caller:** Note the caller's full name. Make sure that it is spelled correctly.
- **Telephone number of the caller:** Include the full number. If there is a specific time when the caller can be reached, add this information.
- **Message:** Briefly summarize the reason for the call but include all important information.
- **Date and time of the call**.
- **Action required:** If any action was taken, record what was done. If action must be taken, record the required action, such as "will call back," "please call back," or "please call after 3pm."
- **Name of the person taking the message:** If the message recipient has any questions, they will know who to ask.

For _____

Date _____ Time _____ A.M. P.M.

WHILE YOU WERE OUT

M _____

Of _____

❑ Phone _____

❑ Fax _____

❑ Mobile _____
Area Code Number Extension

TELEPHONED		PLEASE CALL	
CAME TO SEE YOU		WILL CALL AGAIN	
WANTS TO SEE YOU		URGENT	
RETURNED YOUR CALL		SPECIAL ATTENTION	

Message _____

Signed

FIGURE 5–3A A sample telephone message form provides the receiver with all the information required to respond to the message.

FIGURE 5–3B Message pads that provide a duplicate of each telephone memorandum can be used to create a telephone log.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 224 14/06/2023 10:30

If an agency uses handwritten forms, it is essential to keep a pencil or pen and paper by the telephone. Some agencies use telephone message pads. If a copy of the message is needed for the patient's record or the agency's telephone log, message pads that provide a duplicate copy of each memorandum recorded can be purchased (**Figure 5–3B**). When recording any messages, always print them clearly. Include all important facts and spell words correctly. Using a headset with the telephone frees the operator's hands and makes it easier to record telephone memorandums or key messages into a computer.

Electronic health record systems frequently include the use of **patient portals**, or secure online websites that are established by a physician, health care facility, or other health care provider. Patients are given an access code to register for the portal so they can log in anytime to gain electronic access to their EHR. This allows patients to request prescription refills, ask questions, request or verify an appointment, view laboratory reports, and perform other similar tasks. When a patient request or question is sent electronically, the system sends an alert that must be answered. These requests or questions must be routed to the appropriate individual in the same manner as telephone requests or questions.

Problem calls can occur in any agency. Some individuals may refuse to give their names or state the purposes of their calls. At times, they may try to intimidate or threaten the person answering the phone. Try to remain calm and to control your temper. Do not hesitate to say, "Dr. Asma cannot be disturbed unless I can tell her who is calling." Be polite but firm in dealing with this type of caller. If a caller gives their name but refuses to state the general purpose of the call, this situation also requires tact. When in doubt, you can put the call on hold and check with the person whom the caller wants. That person can then determine whether to take the call.

If a call must be put on hold or you know there will be a slight delay before the appropriate person answers the call, ask the caller, "May I put you on hold for a moment?" Make sure the patient consents to being put on hold before placing a hold on the call. Never leave a caller on hold for longer than 1 minute. If there is a delay, offer to take the caller's number and have the individual return the call. Be considerate of all callers.

Correct telephone techniques require practice and experience. Think about the kind of impression you want to create; practice correct responses. At all times, think before you speak. Avoid comments that might offend a caller. Treat callers as you would want to be treated if you were the caller.

AUTOMATIC ROUTING TELEPHONE SYSTEMS

Many health care facilities have telephone systems with an **automated routing unit**. This type of system allows many telephone calls to be answered at the same time. The system answers the telephone and a recorded voice provides directions to the caller. Most systems provide a menu with a series of numbers. The caller presses the correct number to connect with a specific department or individual. The routing system can be programmed so a caller with an emergency can be transferred immediately to an individual who can handle the emergency.

وزارة التعليم
Ministry of Education
2026 - 1448

Voicemail is a common feature of most automated routing systems. If the individual is not available, the caller is instructed to leave a message or directed to contact another person. It is essential that individuals with voicemail check messages frequently. Most telephones will provide a signal, such as a beep, to alert the individual that messages are on the voicemail system. An individual who does not respond to voicemail messages creates poor public relations.

ANSWERING SERVICES AND MACHINES

An **answering service** is used by many health care agencies to respond to telephone calls when staff are unavailable. This allows the patient to talk with an operator at the answering service who can transfer the call to the appropriate individual, contact the individual and ask them to call the patient, or record a message. The health care agency provides the operator with procedures to follow in case of an emergency, telephone numbers of individuals who may have to be contacted, and guidelines for a variety of calls. The health care agency usually pays a monthly fee for this service.

An answering machine is used in some health care agencies, but it is not as efficient as an answering service. The recording on the answering machine usually identifies the agency and asks the caller to leave a message. Some health care agencies also include the hours they are open on the recording. If an answering machine is used, the message on the machine should tell patients what to do in case of an emergency. Most agencies provide an alternative number a patient can call for an emergency. The answering machine must be checked frequently for messages. A designated individual should check for messages immediately after the agency opens and at frequent intervals if the machine is used while the agency is open.

PAGING SYSTEMS

A **paging system** allows an individual to be contacted by using a pager or beeper. The pager can provide a voice message, a signal, such as a beep that alerts the individual to call a designated number to receive the message, or a digital message on a display screen with the telephone number of the caller or a message. The type of message received depends on the paging system used. Pagers are used to contact an individual. Most do not allow for two-way communication, but they do allow access to the individual 24 hours a day. The individual receiving the pager message must use a telephone to contact the caller. Newer two-way pagers can be used to both receive and send messages, eliminating the need for the receiver to use a telephone to respond to the page. The health care agency usually pays a monthly fee for each pager in use.

CELLULAR TELEPHONES

A mobile (cellular) telephone or smartphone allows two-way communication between people in almost any location. They provide much more flexibility for an individual to receive calls. It is more efficient than a pager because the individual does not have to use another telephone to respond.

وزارة التعليم
Ministry of Education
2026 - 1448

ELECTRONIC MAIL

Electronic mail, or e-mail, allows an individual to use an Internet connection to send, receive, and forward messages in digital form. The e-mail message can be sent to another individual in place of a telephone call or letter. Insurance companies, billing services, and health care agencies use e-mail messages to communicate with each other. In large health care agencies where computers are networked (electronically connected to each other), an e-mail message can be forwarded to many staff members at the same time and take the place of a written interoffice message. If an e-mail message is transmitted through the Internet on a modem that is not secure, it can be intercepted and read by others. For this reason, confidential patient information should not be sent unless a strong encryption program, firewall, or password protection is used.

DIGITAL HEALTH CARE

Virtual and digital services are now integral to Saudi health care provision. There are many such services available, covering the whole health care service. They help patients to access services from anywhere in the country without needing to visit a hospital. This saves time and helps to improve patients' experience.

For example, the Seha Virtual Hospital connects over 200 hospitals with more than 30 specialized health services and includes a virtual appointment booking system. AI (artificial intelligence) now powers the detection of diabetic retinopathy (an eye condition that can cause blindness) in many Saudi hospitals. This enables early detection and treatment for the condition. Saudi Arabia is at the forefront of digital health care, having built one of the most advanced health care ecosystems in the world.

checkpoint

1. What information do you need to be able to screen a telephone call?
2. When taking a telephone message, what are six components that messages should always contain?

5:3 SCHEDULING APPOINTMENTS

One of the most frequent complaints that patients voice regarding doctor's offices, clinics, and other health agencies is having to spend a lot of time sitting in waiting rooms before getting to see doctors or other appropriate health personnel. To prevent this as much as possible, offices use a carefully planned appointment schedule. Correct scheduling of appointments is essential for good public relations.

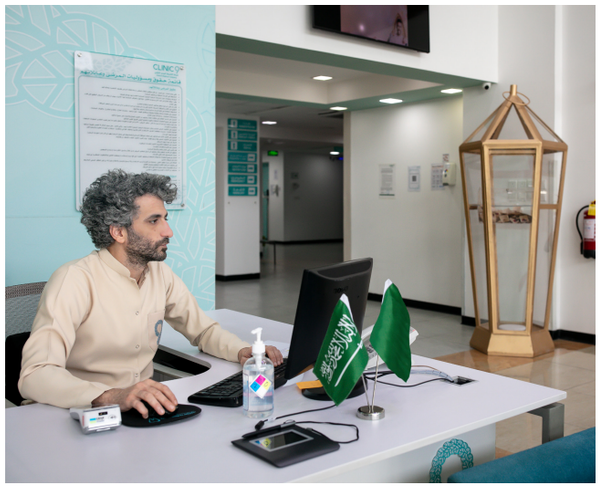

FIGURE 5–4A In most health care agencies, appointment scheduling is done by computer.

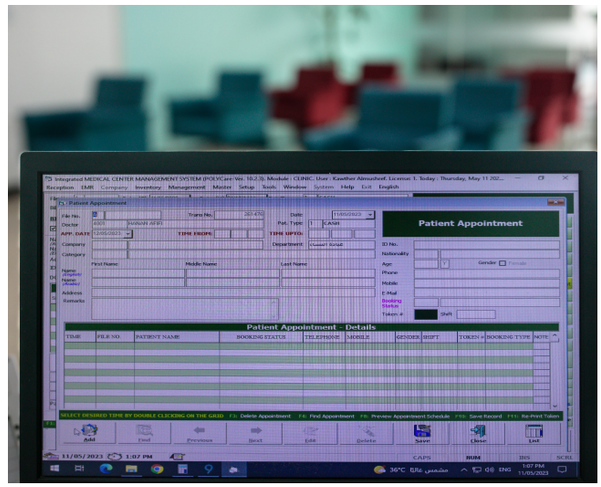

FIGURE 5–4B A sample computer screen showing an appointment that has been scheduled.

In most health care agencies, appointment scheduling is done by computer (**Figures 5–4A** and **5–4B**). The computer automatically locates the next available date and time, provides a record of appointments already scheduled, can be programmed to schedule a set block of time for a particular procedure, and prints out copies of the daily schedule. Although computerized scheduling can be efficient and convenient, an alternate system must exist for downtime, or times when the computer is not functioning.

If the computer program is not working, or is not available in an office, appointment books or logs may be used. Appointment books or logs vary from office to office. However, most contain one or one-half page for each day. Time is usually blocked off in units of 10–15 minutes so that all time can be used wisely. Become familiar with the type of appointment book you will use and know what block of time each line represents.

An organized approach is needed to avoid scheduling patients at times when the appropriate person is not available. When scheduling appointments, take into account the daily rest period and meetings, and avoid scheduling any appointments during these periods. A large X is usually drawn through each of these time periods so that no scheduling errors can occur. With computer scheduling, some programs highlight the block-out times in a different color or use lines to mark off the times.

If an appointment book or log is used to schedule appointments, most agencies use a pencil to record the appointments. In this way, if an appointment is canceled, names can be erased, and the time can be assigned for another patient. Follow your agency's procedure.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 228 14/06/2023 10:30

Before scheduling any appointment, determine how long various procedures in your agency take. If an examination takes 1 hour and you schedule a 15-minute appointment, you will be 45 minutes behind for later appointments. Many agencies keep lists of standard procedures and the average time required for each near the appointment book. An example is shown in **Table 5–1**.

Procedure	Time (minutes)
Amalgam restoration	30
Composite restoration	30
Crown preparation	45–60
Crown placement	15–20
Denture placement	15
Denture preparation	30–45
Examination (initial)	30
Examination (general)	15
Extraction	30–45
Prophylactic (general)	30–45
Root canal	45–60
Whitening	45–60

TABLE 5–1 Procedure scheduling times.

Appointments should be scheduled as close together as possible, but not so close that patients will feel rushed in the office or be required to wait for long periods. Long periods of unscheduled time are wasteful and cost money. Some agencies schedule a 15–30 minute **buffer period** in the middle of each morning and afternoon. This allows time to catch up if some appointments run over. If the appointments run as scheduled, this time can be used for other business, such as returning telephone calls or seeing patients with emergencies.

When a patient calls for an appointment, find out the reason for the appointment. Then try to accommodate the patient by scheduling an appointment convenient for them. Questions, such as, "Do you prefer morning or afternoon?" "Which day is most convenient?" and "Would two o'clock or four o'clock be more convenient?" give the patient a choice and help you select the correct time and day. Sometimes, choices are limited because the appointment schedule is full. However, by giving patients as much choice as possible, you let them know that you are trying to accommodate them.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 229 14/06/2023 10:30

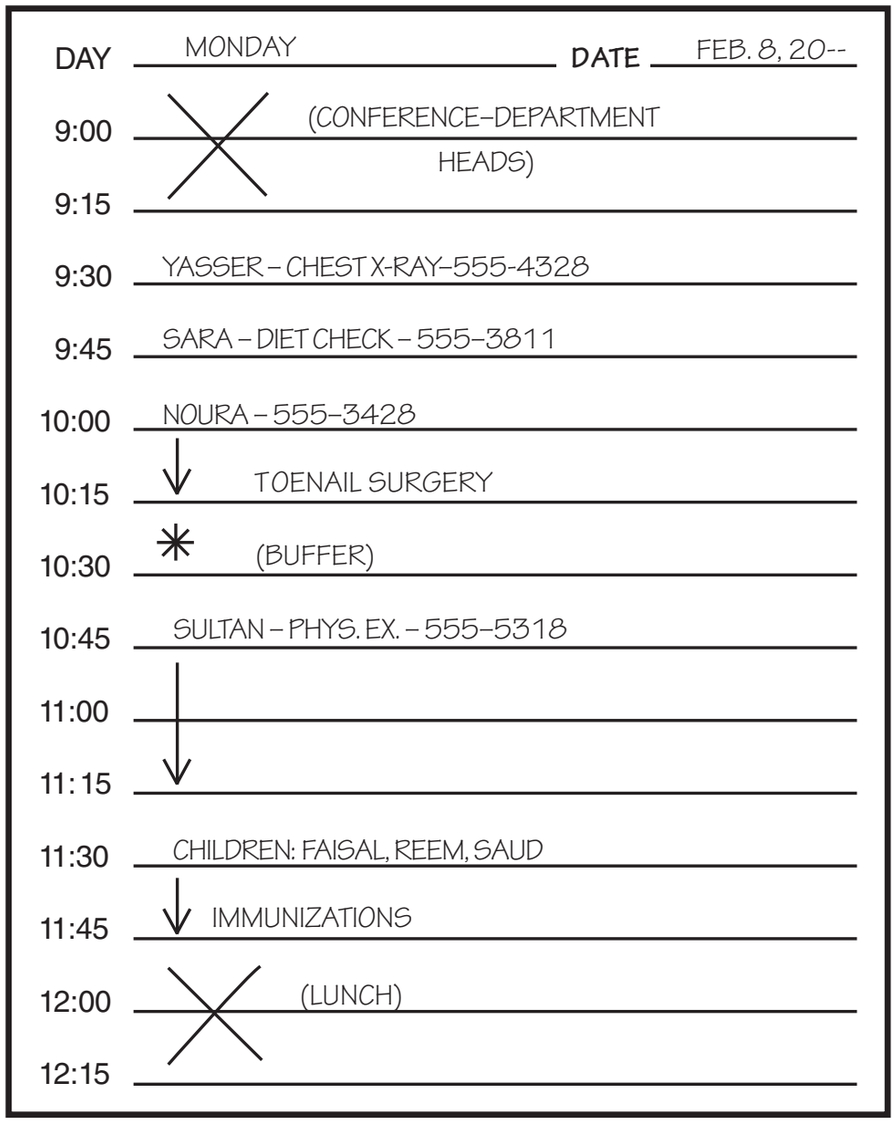

FIGURE 5–5 A sample appointment schedule.

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Make sure you have the required information before closing your conversation with the patient. Obtain the full name of the patient. Do not hesitate to ask the patient to spell the name if you are not sure of the correct spelling. Determine the reason for the appointment. It is also wise to get the patient's telephone number in case an emergency requires cancellation of the appointment. Writing the telephone number in the appointment ledger eliminates having to find the number in the patient's record and saves time. Repeat the date, day, and exact time of the appointment to the patient. By giving both date and day, you provide a double check and prevent errors. Make sure the patient understands all information. Before hanging up the phone, you can again repeat the information by saying, "We will expect you Friday, March 1st, at two o'clock. Thank you for calling, Mrs. Shahad. Goodbye."

وزارة التعليم
Ministry of Education
2016 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 230 14/06/2023 10:30

If a patient schedules an appointment at the health care facility, an appointment card or printed sheet should be given to the patient. The card/sheet should state the date, day, and time of the appointment. Many health care facilities also use e-mail, text messages, or telephone calls to send appointment reminders to their patients, so make sure you follow the policy in place at your facility.

After scheduling an appointment, make sure that you mark the full amount of time in the schedule. In many agencies, arrows are used that extend down from the patient's name to fill in the entire time block the patient will require (**Figure 5–5**). This also prevents scheduling errors. A computer system will usually automatically block off the time required based on the procedure entered.

If a patient calls to cancel an appointment, be polite. Ask the patient if they would like to reschedule the appointment. Delete the appointment on the computerized schedule or remove it from the printed schedule by drawing a single line through the entry. Then record all new information in the correct time block. It is not necessary to pry and ask patients why they must cancel. Many patients will offer explanations; however, if they do not, do not question them.

Chronic scheduling problems occur in every agency. Some patients schedule appointments and then do not show up for them. If a patient becomes a chronic offender, there are several methods of dealing with the problem. One method is to schedule the patient at the end of the day. This way, if the patient does not keep the appointment, other patients and the schedule will be minimally affected. In most agencies, canceled appointments or "no-shows" are noted on patients' charts. If the individual who canceled or did not appear for an appointment needs continuing care, efforts must be made to contact the person. Most agencies have a policy that requires calling the patient and recording the date and time of each call on the patient's chart. If there is no response from the patient after several telephone calls, a letter or e-mail is sent to the patient explaining the need for care. Documenting all efforts in the patient's chart provides legal protection if the patient files a lawsuit. The final decision on how to deal with these situations rests with the individual in charge.

Emergencies occur in every agency. In the case of an emergency, appointments may run later than scheduled. Sometimes, it is necessary to cancel all appointments scheduled. If possible, patients should be notified by telephone before they come to the office or agency. When you call to cancel an appointment, make every effort to reschedule the patient at a time convenient to them. If a patient arrives at the office and appointments are behind schedule, offer the patient a choice between waiting or scheduling another appointment. If told that an emergency has occurred (the full nature of the emergency need not be explained) and they will have to wait, many patients will be willing to do so. However, patients should never be left waiting without an explanation.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 231 14/06/2023 10:30

Correctly scheduling appointments takes practice. If your present system is resulting in long waits for patients, review your system. Determine whether longer time periods are necessary for each patient. Add additional buffer times for overlap or emergency patients, if indicated. Constantly be willing to try to correct problems and create a good impression of the agency.

checkpoint

1. Why do some offices schedule a buffer period in the middle of the morning?
2. How can a patient who repeatedly misses appointments be approached?

5:4 COMPLETING MEDICAL RECORDS AND FORMS

Medical records vary. Two common forms are patient information forms and medical history forms. These forms can be printed and completed manually, or the information can be entered into a computer database or EHR. All records are considered to be confidential. No information can be released from the records without the written consent of the patient. These forms belong to the physician or agency. They should be locked up or electronically secured when not in use.

Patient information forms are also called patient registration forms (**Figure 5–6**). This form is usually completed on a patient's first visit to an office or health agency. On subsequent visits, patients are asked to verify the information to be sure it is correct. The patient information form contains patient demographics. The form may be a sheet of paper or the inside of the patient's folder. In most offices, the information is entered into a computer database on the patient's EHR. Sample computer entry screens for patient information and insurance information are shown in **Figures 5–7A** and **5–7B**. No matter what type of form is used, most contain the following information:

- Patient's name in full.
- Patient's address.
- Patient's telephone number.
- Patient's e-mail address.
- Patient's marital status, sex, and birthdate.
- Patient's place of employment.
- Name of the person responsible for the account (if paying).
- Insurance company information, including name of company, address, policy and group numbers, and other pertinent information.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 232 14/06/2023 10:30

PATIENT INFORMATION

DATE:

PATIENT'S NAME	MARITAL STATUS S M W DIV SEP	DATE OF BIRTH	NATIONAL ID NO.
STREET ADDRESS ☐ PERMANENT ☐ TEMPORARY	CITY, AREA, BUILDING NUMBER	POSTCODE	HOME PHONE NO.
CELL PHONE NUMBER	E-MAIL ADDRESS		
PATIENT'S EMPLOYER	OCCUPATION (INDICATE IF STUDENT)	HOW LONG EMPLOYED?	BUSINESS PHONE NO.
EMPLOYER'S STREET ADDRESS	CITY, AREA, BUILDING NUMBER		POSTCODE
IN CASE OF EMERGENCY CONTACT:			DRIVERS LIC. NO.
SPOUSE'S NAME			
CELL PHONE NUMBER	E-MAIL ADDRESS		
SPOUSE'S EMPLOYER	OCCUPATION (INDICATE IF STUDENT)	HOW LONG EMPLOYED?	BUSINESS PHONE NO.
EMPLOYER'S STREET ADDRESS	CITY, AREA, BUILDING NUMBER		POSTCODE
WHO REFERRED YOU TO THIS PRACTICE?			

IF THE PATIENT IS A MINOR OR STUDENT

MOTHER'S NAME	ADDRESS, CITY, AREA, BUILDING NUMBER, POSTCODE		HOME PHONE NO.
MOTHER'S EMPLOYER	OCCUPATION	HOW LONG EMPLOYED?	BUSINESS PHONE NO.
EMPLOYER'S STREET ADDRESS	CITY, AREA, BUILDING NUMBER		POSTCODE
FATHER'S NAME	ADDRESS, CITY, AREA, BUILDING NUMBER, POSTCODE		HOME PHONE NO.
FATHER'S EMPLOYER	OCCUPATION	HOW LONG EMPLOYED?	BUSINESS PHONE NO.
EMPLOYER'S STREET ADDRESS	CITY, AREA, BUILDING NUMBER		POSTCODE

INSURANCE INFORMATION

PERSON RESPONSIBLE FOR PAYMENT, IF NOT ABOVE	ADDRESS, CITY, AREA, BUILDING NUMBER, POSTCODE		HOME PHONE NO.
☐ COMPANY NAME & ADDRESS	NAME OF POLICYHOLDER	CERTIFICATE NO.	GROUP NO.
☐ COMPANY NAME & ADDRESS	NAME OF POLICYHOLDER	POLICY NO.	
☐ COMPANY NAME & ADDRESS	NAME OF POLICYHOLDER	POLICY NO.	

AUTHORIZATION: I hereby authorize the physician indicated above to furnish information to insurance carriers concerning this illness/accident, and I hereby irrevocably assign to the doctor all payments for medical services rendered. I understand that I am financially responsible for all charges whether or not covered by insurance.

Responsible Party Signature

FIGURE 5–6 A sample patient information form.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 233 14/06/2023 10:30

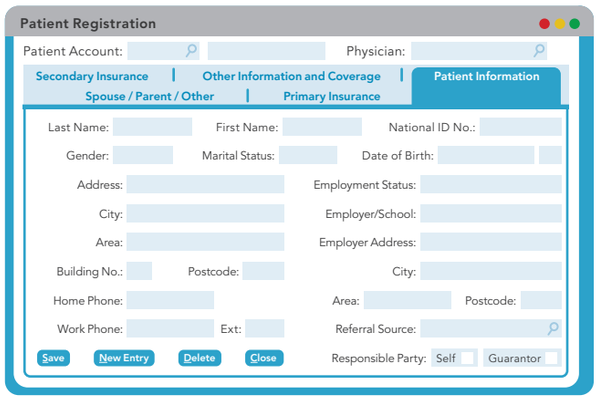

FIGURE 5–7A A sample computer database screen for patient information.

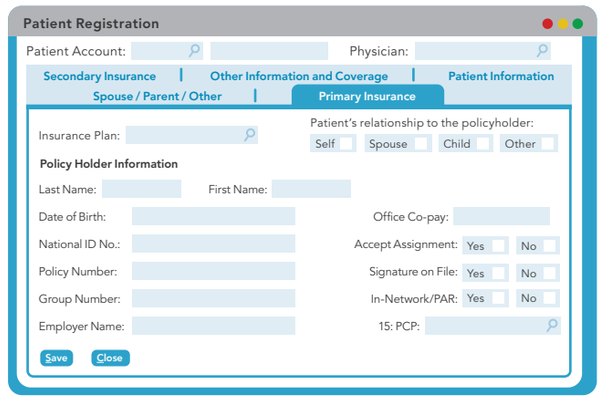

FIGURE 5–7B A sample computer database screen for insurance information.

- Name of referring physician or other person.

In most agencies, this information is keyed into a computer database and a printed copy is placed in the patient's record or the information is included in the patient's EHR. Care must be taken to ensure that all information is accurate. Double-check numbers and spelling.

A **medical history** form (**Figure 5–8**) is another important form used in almost all health care agencies. Information on this form helps the practitioner provide better care and, at times, even make a diagnosis. A medical history can be recorded on a form or entered into a computer database on the patient's EHR. These forms also vary but most forms contain the following basic parts:

- **General information:** This includes name, address, age, and other similar information.
- **Family history:** Family history includes information on members of the patient's immediate family, including parents, grandparents, sisters, and brothers. Questions are asked regarding heart disease, cancer, mental disorders, diabetes, epilepsy, kidney disease, and allergies. If a family member has died, the cause of death and age at time of death are recorded. Only information regarding blood relatives is obtained. Information regarding relatives by marriage, such as a mother-in-law, is not obtained because the patient cannot inherit diseases from these individuals.
- **Patient's medical history:** Medical history includes past illnesses, treatments, operations, accidents, physical defects, allergies, childhood diseases, and other similar items. For each past illness, the year of the illness or the patient's age at the time of the illness is recorded. For each past operation, the date of the operation or the age of the patient at the time of the operation and the type of operation are recorded.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 234 14/06/2023 10:30

MEDICAL HISTORY FORM

Date _____

Patient's name		
Age	Date of birth	Sex
Address	City	Postcode
Phone ( )	Cell phone number	E-mail address
Insurance company	Policy number	
Place of employment	Address	
Phone ( )	Job responsibilities	
Parent/Guardian if minor		
Address	City	Postcode
Phone ( )	Cell phone number	E-mail address

Family History:

List family members: (mother, father, brothers, sisters, grandparents, etc.)—ages and health status (if deceased write their age at the time of their death and the cause). List allergies and/or any conditions or diseases they may have or have had, such as asthma, arthritis, tuberculosis, diabetes, cancer, heart disease, hypertension, kidney disease, mental illness, depression, or any other health problems that you know of in your family.

_____

_____

_____

Patient's Past History: Mark the boxes to the right either "yes" or "no" for the following questions:*

Do you ever have or have you ever had any of the following:	(Yes)	(No)
SKIN		
Rashes, hives, itching or other skin irritations	( )	( )
EYES, EARS, NOSE, THROAT		
Headaches, dizziness, fainting	( )	( )
Blurred or impaired vision	( )	( )
Hearing loss or ringing in the ears	( )	( )
Discharge from eyes or ears	( )	( )
Sinus trouble/colds/allergies	( )	( )
Asthma or hay fever	( )	( )
Sore throats/hoarseness	( )	( )
CARDIOPULMONARY		
Shortness of breath	( )	( )
Persistent cough or coughing up blood or other secretions	( )	( )
Chills and/or fever	( )	( )
Night sweats	( )	( )
Tuberculosis or exposed to TB	( )	( )
Scarlet fever or rheumatic fever	( )	( )
Chest pain	( )	( )
Heart palpitations or rapid heart-beat or pulse	( )	( )
High blood pressure	( )	( )
Swelling of hands and/or feet	( )	( )
GASTROINTESTINAL		
Heartburn or indigestion	( )	( )
Nausea and/or vomiting	( )	( )
Loss of appetite	( )	( )
Belching or gas	( )	( )
Peptic ulcer, gallbladder or liver disease	( )	( )
Yellow jaundice or hepatitis	( )	( )
Diarrhea or constipation	( )	( )
Dysentery	( )	( )
Rectal bleeding, hemorrhoids (piles)	( )	( )
Tarry or clay-colored stools	( )	( )
GLANDS		
Weight gain or loss	( )	( )
Diabetes	( )	( )
Thyroid or goiter	( )	( )
Swollen glands	( )	( )
GENITOURINARY		
Kidney disease or stones, or Bright's disease	( )	( )
Painful, frequent or urgent urination	( )	( )
Blood or pus in urine	( )	( )
Sexually transmitted disease (venereal disease)	( )	( )
NEUROMUSCULAR		
Problems with becoming tired and/or upset easily	( )	( )
Nervous breakdown/depression	( )	( )
Poliomyelitis (infantile paralysis)	( )	( )
Convulsions	( )	( )
Joint and/or muscular pain	( )	( )
Back pain or injury/osteomyelitis/ rheumatism	( )	( )

Are you currently taking any medications?	Yes ( )	No ( )
If yes, please list them_____		
Have you ever had or been treated for cancer or any tumors?	( )	( )
Are you anemic or have you ever had to take iron medication?	( )	( )
Do you use tobacco?	( )	( )
What type?_____	( )	( )
WOMEN ONLY		
Painful menstrual periods	( )	( )
Pregnancy/abortion/miscarriage	( )	( )
Vaginal infection or discharge/ abnormal bleeding	( )	( )

Last menstrual period_____

Birth control_____

List dates of all operations/surgeries, injuries, and illnesses that required hospitalization:

_____

_____

Did you ever receive benefits from a medical insurance claim due to illness or injury?	Yes ( )	No ( )
Were you ever rejected from the military or for employment?	( )	( )
Were you absent from school/work in the past 10 years because of illness or injury?	( )	( )
Did you ever seek psychological or psychiatric treatment?	( )	( )

*Please use the back of this form to explain any "yes" answers. Thank you.

FIGURE 5–8 A sample medical history form.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 235 14/06/2023 10:30

FIGURE 5–9 Make sure the patient has complete privacy while completing the medical history form.

- **Personal/Social history:** This may include questions about the patient's diet, sleep, or exercise routines and personal habits, such as smoking. In the case of a female patient, information regarding pregnancies, number of children, and menstrual pattern is also recorded. A list of current medications being taken by the patient is usually requested.
- **Present illness or ailment:** This is an exact description of the signs and symptoms the patient is currently experiencing. Information about when the illness first occurred, any previous treatment, and other pertinent information offered by the patient should be noted. This section is sometimes designated as chief complaint.
- **Physical examination:** The physician performs an examination of all body systems and records both positive and negative findings. This section may also include results from laboratory tests, although there is sometimes a separate section for laboratory tests.
- **Diagnosis, prognosis, treatment:** These sections can be separate or combined on the form. They are completed by the physician after all the previous information is reviewed. The diagnosis is the physician's judgment regarding what disease or condition the patient has. Sometimes a tentative diagnosis is listed, or the physician may write "R/O" followed by the name of one or more diseases to indicate that tests should be done to rule out the diseases listed. The prognosis is the physician's opinion regarding the course and expected outcome of the disease or condition, such as "full recovery in 1–2 weeks". Any specific treatment given is also listed.

In most agencies, the health care assistant will complete only the patient information and family history, patient's medical history, and personal history sections. Patients may also be asked to complete a form providing this information, which can then be checked by the assistant or physician. The physician or another authorized person will do all other parts of the medical history.

وزارة التعليم
Ministry of Education
2016 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 236 14/06/2023 10:30

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Make sure the patient has complete privacy while completing the medical history form (**Figure 5–9**). A separate room should be used, and the door to the room should be closed. Specific questions must be asked. It is essential that questions be asked in a professional rather than prying manner. It is also important to make sure the patient understands the meaning of all questions. For example, you may have to explain to the patient that diabetes is a disease caused by eating sugars. Information obtained must be accurate and complete. Facts should be rechecked as necessary. The patient should be given time to think about each question. It is important that the patient feels relaxed and at ease during the questioning. Note any additional information that the patient provides if it seems important to the overall history. If no specific areas are provided on the forms for this type of information, be sure the physician or other appropriate person is made aware of the information.

Legal requirements must be observed while working with medical records. It is essential to remember that all information on the record is confidential and cannot be given to any other individual, agency, or insurance company without the written permission of the patient. Records must be stored in a secure, locked area with limited access. Computerized records must use encryption technology, firewalls, or password protection.

The final version of the medical history record is usually keyed into a computer program and printed for the patient's permanent record, or it is included in the patient's EHR. Make sure that any handwritten copy is legible and clear. Double-check all information to make sure that it has been recorded correctly.

checkpoint

1. What information is contained on a patient information form?
2. Where is a patient's medical history stored?

5:5 COMPOSING BUSINESS LETTERS

TYPES OF LETTERS

Comm

There are many different types of business letters. Some types of business letters that you may be required to prepare include:

- **Appointment letter:** Informs a patient of a scheduled appointment. All information, including the day, date, and time must be included in the letter. In many agencies, appointment reminders are sent by e-mail or SMS message.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 237 14/06/2023 10:30

- **Recall letter:** Reminds a patient that it is time to return for a periodic examination. A reminder letter for a postoperative check-up is one example. In some agencies, recall cards, e-mails, or SMS messages are sent to patients.
- **Consultation letter:** Sent to another professional to request an examination of a particular patient. It is sometimes used as a referral to another physician, therapist, or treatment/diagnostic agency.
- **Inquiry letter:** Seeks some information. A letter asking a patient for information about medical insurance is one example.

PARTS OF A LETTER

Every letter must include certain parts. The parts and their components are as follows:

- **Letterhead (or heading):** In most cases, a computer template is used to create letters and the letterhead or heading is saved in the template. The agency's name, address, and telephone number are populated in the template and will print off with the letter. Some health care agencies also include their website address and e-mail address. In some agencies, printed stationery is used, and the agency's name, address, and phone number are printed on the paper as the letterhead.
- **Date line:** The date the letter is being written is keyed under the letterhead.
- **Inside address:** This is the name and address of the person or firm to whom the letter is being sent.
- **Salutation:** This is the name of the person to whom the letter is directed. The salutation should include the title, followed by the last name of the person. If the letter is addressed to a title (for example, human resources manager), the salutation should read *Dear Human Resources Manager* or *To Whom It May Concern*.
- **Subject line:** Some letters may include a subject line to reference the reason for writing. This is not present in all letters.
- **Body:** This is the message of the letter. Most letters include three paragraphs. The first paragraph states why the letter is being written. The second paragraph lists the main facts. The third paragraph is the sign-off or final reminder.
- **Complimentary close:** This is a courtesy, most commonly *Sincerely*, *Sincerely yours*, *Respectfully yours*, or *Yours truly*. Only the first word of the complimentary close is capitalized.
- **Signature:** The signature is the name and title of the person writing the letter. Leave space after the complimentary close for a handwritten signature, and then key the name and title of the person who is sending the letter.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 238 14/06/2023 10:30

- **Reference initials:** Reference initials are the initials of the person dictating the letter and the initials of the person preparing the letter, or the initials of just the preparer.
- **Enclosure notation:** If enclosures are included with the letter, this is noted at the end, with a brief description of the material enclosed.

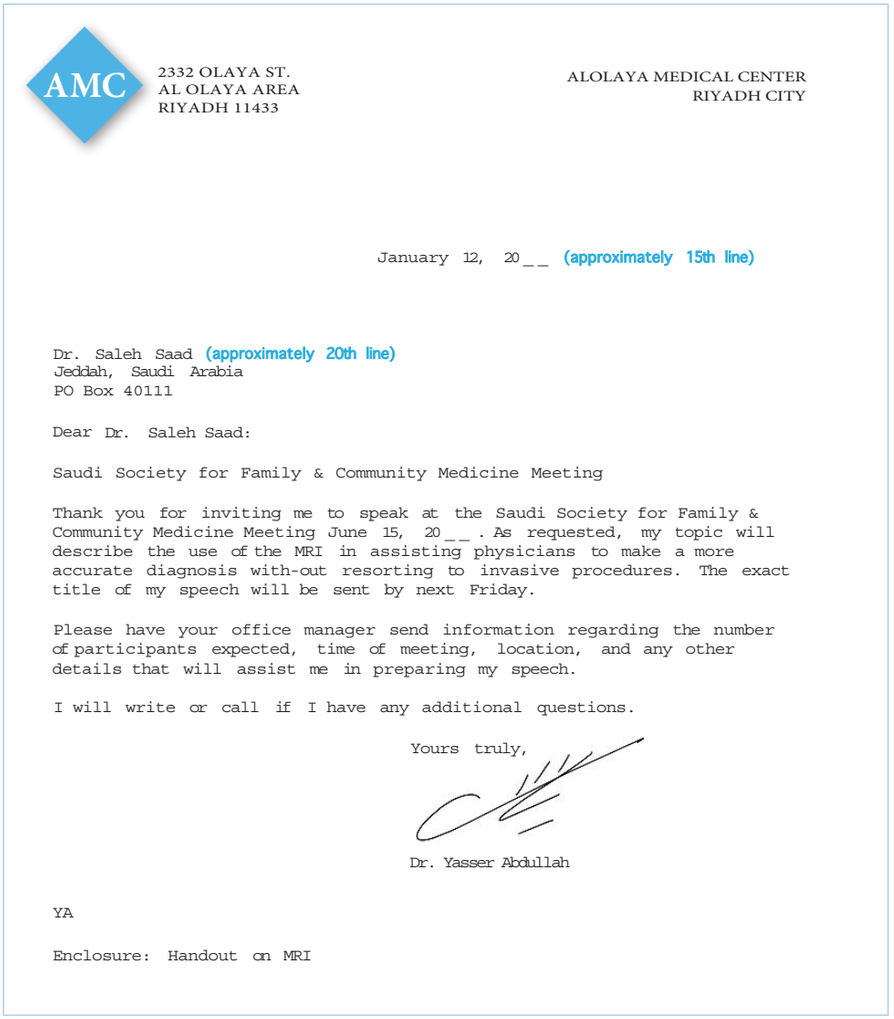
PROPER FORM FOR LETTERS

When keying a letter into a computer, it is important to follow specific rules and use correct spacing. Some of the main points to observe are as follows:

- All letters must be neat and professional. Spelling and punctuation must be correct. Use the spelling and grammar checks on the computer to correct errors. Use a dictionary to check medical or dental terms that might not be included on the word processing program's spell-checker.

FIGURE 5–10 The form for a block style letter. All sections are aligned at the left margin.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 239 14/06/2023 10:30



AMC

2332 OLAYA ST.
AL OLAYA AREA
RIYADH 11433

ALOLAYA MEDICAL CENTER
RIYADH CITY

January 12, 20__ (approximately 15th line)

Dr. Saleh Saad (approximately 20th line)
Jeddah, Saudi Arabia
PO Box 40111

Dear Dr. Saleh Saad:

Saudi Society for Family & Community Medicine Meeting

Thank you for inviting me to speak at the Saudi Society for Family & Community Medicine Meeting June 15, 20__. As requested, my topic will describe the use of the MRI in assisting physicians to make a more accurate diagnosis with-out resorting to invasive procedures. The exact title of my speech will be sent by next Friday.

Please have your office manager send information regarding the number of participants expected, time of meeting, location, and any other details that will assist me in preparing my speech.

I will write or call if I have any additional questions.

Yours truly,

Dr. Yasser Abdullah

YA

Enclosure: Handout on MRI

FIGURE 5–11 The form for a modified block style letter.

- The style for letters varies. Two common styles are block style and modified block style. In block style (**Figure 5–10**), all parts of the letter are aligned starting at the left margin of the paper. In modified block style (**Figure 5–11**), certain parts of the letter are aligned at the center line of the paper and the remaining parts are aligned at the left margin of the paper.
- If a computer template with a populated letterhead is used, space down three to four lines below the letterhead. Begin keying at the center line for modified block style or at the left margin for block style. Key in the month, day, and year. Do not abbreviate the month.
- If a letterhead is printed on the paper, space down approximately 15 lines from the top of the document. Begin keying at the center line for modified block style or at the left margin for block style. Key in the month, day, and year. Do not abbreviate the month.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 240 14/06/2023 10:30

- Space down five lines and begin the inside address on the fifth line below the last line of the heading. Start at the left margin line regardless of style. The inside address should be at least three lines long. The first line is the name and title (for example, *Mr.* or *Ms.*) of the person to whom the letter is being sent. Never use a double title, such as *Dr. D. A. Safa, M.D.*; rather, use *D. A. Safa, M.D.* The second line is the building number and street. The third line is the district, and the next the postal code, followed by the city.
- Space down two lines and begin the salutation on the second line below the inside address. Start on the left margin regardless of style.
- If a subject line is included, space down two lines below the salutation. Begin keying at the left margin to insert the subject of the letter.
- Space down two lines and begin keying the body on the second line after the salutation or subject line. Start each line of the body on the left margin. In most cases, the first line of any paragraph in either modified block style or block style is not indented. Some agencies, however, may indent the first line of each paragraph five spaces in a modified block style letter.
- Space down two lines after the last sentence in the body and begin keying the close. Start at the center line for modified block style or at the left margin for block style. Capitalize only the first word of the complimentary close and place a comma at the end of the close, for example, *Sincerely, Sincerely yours, Respectfully yours,* or *Yours truly.*
- Leave four to five blank lines for the written signature and begin the keyed name and title on the fifth or sixth line below the complimentary close. Start at the center line for modified block style or at the left margin for block style. Key the name and title of the person sending the letter. Long titles may be placed on a second line under the name.
- Key the reference initials. Start at the left margin regardless of style. Key either the initials of just the preparer or the initials of the writer and the initials of the preparer. Use either capital or small letters. If two sets of initials are used, use a colon to separate capitalized initials and a slash to separate lowercased initials, for example, *LMS:WHB* or *lms/whb.* Some agencies use capital initials for the writer, lowercase initials for the preparer, and a colon to separate the two sets of initials.
- Leave neat, even margins at both sides of the paper. Margins should be wide enough to be attractive, but not too wide as to distort.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 241 14/06/2023 10:30

SUMMARY

All letters should be proofread before the sender receives them for signature. Make sure that all words are spelled correctly, and that complete sentences and correct punctuation are used. Use the spelling and grammar checks available on most word-processing programs. In most agencies, computers and word-processing software are used to prepare letters, so it is easy to correct errors on the computer screen prior to printing a hard copy of a letter.

Technology

Many health care agencies have standard form letters saved in a computer database or embedded in their medical office software. When a letter is needed for a specific purpose, such as a letter of appointment, the letter of appointment form letter is retrieved. The patient's name and personal information are keyed into the form letter. If the same letter must be sent to a large group of people, the mailmerge feature (found on most word-processing programs) can be used to create a large number of personalized letters at one time.

checkpoint

1. List four types of letters that you may be required to prepare.
2. What is included in the body of a letter?

5:6 COMPLETING INSURANCE FORMS

Because many patients rely on insurance companies to pay medical and dental expenses, completing insurance forms may be a part of the duties of the medical assistant. To obtain prompt payment from the companies, you must complete the forms correctly.

Information regarding a patient's insurance coverage is essential. Such information is usually obtained on the patient's first visit to the agency. The information is usually recorded on the patient information form, in a computer database, or in the patient's EHR. In addition, most agencies make a copy of the front and back of a patient's insurance card and place the copy in the patient's file or in the patient's EHR. It is essential that all names, addresses, and contract numbers be correct. Double-check this information as it is being recorded. It is also wise to check each time the patient visits the health care agency that their coverage has not changed.

If a patient wishes to file an insurance claim, make sure that they have completed any parts of the form that they are required to complete. Also make sure that the patient has signed the form wherever their signature is required. If the patient is a dependent, such as a spouse or older child, it is also necessary to obtain the signature of the person to whom the insurance contract has been issued. This person is referred to as the insured.

وزارة التعليم
Ministry of Education
2016 - 1438
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 242 14/06/2023 10:30

Confidential medical information cannot be released unless a patient signs an authorization to release information to insurance companies. Because most agencies now complete insurance forms on a computer and file the claims electronically, the patient and the insured usually sign an "Authorization to Release Information and Assign Benefits" form. This form is kept in the patient's file and the insurance form is marked "patient's signature on file". In some agencies, the form is scanned into the computer and filed electronically with the insurance form or is part of the patient's EHR.

CODING INSURANCE FORMS

Technology

Many insurance forms have two parts that require codes: diagnosis and procedures/services. Alphanumeric (letters and numbers) codes are used to identify information in a uniform and standard manner. Most insurance companies use computers to process claims, so the alphanumerical codes must be accurate. Use of an incorrect code can lead to rejection or delayed payment of a claim.

The World Health Organization (WHO) has developed a coding system for diagnoses to aid in tracking the presence of the disease, maintaining morbidity (affected with disease) and mortality (causing death) statistics, and creating an international database for identifying disease. This coding system is known as the **International Classification of Diseases** (ICD). In Saudi Arabia, the 10th revision of the International Classification of Diseases, Australian Modification (ICD-10-AM) is used for diagnosis coding and the Australian Classification of Health Interventions (ACHI) for inpatient procedure reporting. The diagnosis is the identification of the patient's disease or condition. If a patient is diagnosed as having more than one condition, the most important diagnosis and its corresponding ICD-10-AM code are listed first. Other diagnoses and their ICD-10-AM codes follow in order of importance.

This coding method is very specific for each disease or condition. The categories begin with a letter. Each level of division is a subcategory. Codes may be three, four, five, six, or seven digits. For example, the category *S42* represents a fracture of the shoulder and upper arm. The code *S42.2* represents a fracture of the upper end of the humerus. The code *S42.20* represents an unspecified fracture of the upper end of the humerus. The sixth digit represents left or right. Therefore, *S42.201* represents an unspecified fracture of the upper end of the right humerus. The seventh digit allows for more specificity. The code *S42.201A* represents an unspecified fracture of the upper end of the right humerus, initial encounter for a closed fracture. On the other hand, the code *S42.201B* indicates an unspecified fracture of the upper end of the right humerus, initial encounter for an open fracture. If there are more than three digits of a code, a period separates the third digit from the fourth digit. Every diagnosis must be coded to the highest level of specificity or the claim will

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 243 14/06/2023 10:30

be rejected. Therefore, it is important to use as many digits as possible with each diagnosis.

It is important to use the latest edition of the book or computer software programs to be sure that the codes are accurate and current. Each procedure or service is assigned a five-digit code without decimal points or periods. Modifiers are used to further explain or to change the meaning of a code and are separated from the code by a dash. For example, the code *44950* indicates an appendectomy, or surgical removal of the appendix. Usually, this is the only code required. However, if the appendectomy was very complex and involved much more time or care than is normally required, the modifier *-22* is added to the CPT code for a correct code of *44950-22*.

To find a diagnosis in the code book, look up the noun or main term in the alphabetical index. For example, look up *hysterectomy* for a diagnosis of *subtotal hysterectomy*. Use the code number in the alphabetical index to find the exact ICD-10-AM number in the tabular list for a subtotal hysterectomy. Most computer programs will start with the noun or the three-digit category. When the noun or three-digit code is keyed into the computer, a list appears with subheadings and complete codes. Examples of the ICD-10-AM codes for classification of diseases of the appendix are shown in **Table 5–2**.

Code	Disease
K35	Acute appendicitis
K35.2	Acute appendicitis with generalized peritonitis:
K35.20	Without abscess
K35.21	With peritoneal abscess
K35.3	Acute appendicitis with localized peritonitis:
K35.30	Without perforation or gangrene
K35.31	With gangrene but no perforation
K35.32	With perforation but no abscess
K35.33	With perforation and abscess
K35.8	Other and unspecified acute appendicitis
K35.80	Unspecified acute appendicitis
K35.89	Other acute appendicitis:
K35.890	Without perforation or gangrene
K35.891	Without perforation, with gangrene

TABLE 5–2 Sample ICD-10-AM codes.

COMPLETING INSURANCE CLAIMS

Some general rules that apply to completing insurance forms are as follows:

- Make sure that you are using the correct form.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 244 14/06/2023 10:30

- Read the form thoroughly or review it on a computer to be sure you understand what is required.
- Check to be sure that the patient has completed the proper areas. Make sure their signature appears in all required spaces. If you are using a computer program to generate the form, make sure the patient and insured have signed an "Authorization to Release Information and Assign Benefits" form. This is often kept in the patient's file or in their electronic health record.
- Double-check for accuracy all names, addresses, and contract numbers listed on the form.
- Policy numbers or contract numbers frequently include a letter or series of letters. Make sure that these numbers are accurate and appear on the form in the proper places.
- Use correct codes, if codes are required. On most forms, numerical codes are used for place of services. Numerical codes are also usually used to describe type of service.
- Answer all questions on the form thoroughly and list specific information. For example, instead of putting "laboratory tests", list the tests that have been performed.
- Standard abbreviations are allowed on most forms. Ensure the accuracy of all abbreviations used. Do not use any periods with abbreviations.
-
Math
Make sure the amounts charged are accurately listed. Double-check all arithmetic.
- Make sure the physician or other authorized person has signed the form in the required areas.
- Note the boxed area for assignment. If the physician or agency will accept the amount allowed by the insurance company as payment in full, this is marked "yes"; if not, it is marked "no".
- The form is generally copied or printed, and a copy is placed in the patient's file, or is included in their EHR.
- Recheck the entire form before sending electronically or mailing.

Technology
In many agencies, computers programmed to complete standard insurance claim forms are used. Information for the insurance claim is entered into the computer. The computer then prints the information in the proper areas on the insurance form. The form can be printed and mailed, but many agencies now file insurance forms electronically on a secure modem. Electronic filing results in faster processing and payment of the claim. These programs are easy to use and save a great deal of time when processing insurance forms.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 245 14/06/2023 10:30

checkpoint

1. What organization developed a coding system for coding diagnoses?
2. When completing an insurance form, you only need to include brief summary information. True or false?

5:7 MAINTAINING A BOOKKEEPING SYSTEM

Most facilities and offices are moving to electronic **bookkeeping**, but some still use the pegboard system. Both systems use the same concepts to track cash flow.

PEGBOARD SYSTEM

The pegboard system is also called a "write-it-once" system. Various records are noted simultaneously. The pegboard system usually encompasses the following series of records:

- **Day sheet (or daily journal):** This is a daily record of all patients seen, all charges incurred, and all payments received (**Figure 5–12**). Each day sheet also provides a "Total" column, which can be used for bank deposit slips; a business analysis summary; a section for daily and monthly account totals; a "Proof of posting" section for verifying that account totals are accurate; and a section to record accounts receivable, or total amounts owed by patients. When a month's supply of day sheets is compiled in one folder, a monthly record of all business is available.
- **Statement–receipt record:** This contains information on past balance due, charges for treatment, payment received, and current balance. Many slips also have a space to note the patient's next appointment. When complete, the statement–receipt can be given to the patient to provide a record of payment or of balance due. In some agencies, another version of this record is being used. This version is usually a three-layer form that notes all the previous information as well as specific services and corresponding insurance code numbers. Called a communication form, or a superbill, this version serves as a statement for the insurance company. One copy can be retained by the agency; the second copy can be sent to the insurance company (or attached to an insurance form) to serve as a claim form; and the third copy can be given to the patient to serve as a payment receipt, a record of treatment or services, a bill for the balance due on the account, and an appointment card, if another appointment is scheduled.

وزارة التعليم
Ministry of Education
2016 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 246 14/06/2023 10:30

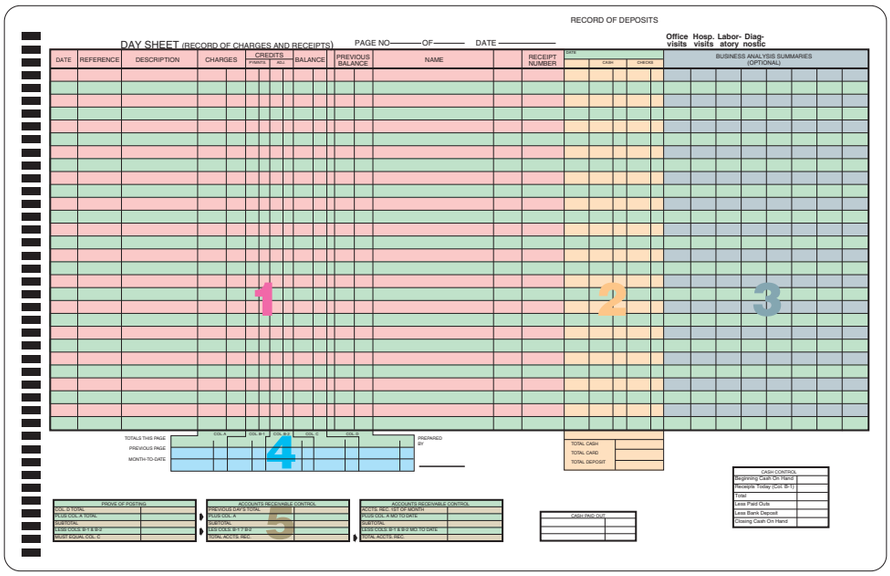


FIGURE 5–12 The day sheet provides a daily record of patients seen, charges incurred, and payments received.

- **Charge slip:** On some pegboard systems, these are a part of the statement–receipt record. When the patient arrives at the agency, their name is entered at the top. This section of the record is torn off the statement–receipt and attached to the patient's file. The physician or other authorized individual then notes the treatments and charges on this slip while treating the patient. The slip is given back to the receptionist, who can then use it to post charges.
- **Ledger card:** This is a total record of care provided to a patient. It is also a financial record of the patient's account. A brief description of services, charges, payments made, and current balance due is noted on the card. In some agencies, copies of the ledger cards are used in place of separate bills. The ledger card is copied and mailed to the patient or sent as an e-mail to provide a monthly statement.

In addition to recording patients' visits and charges, the pegboard system is also used to record payments received. One example is an insurance company check for payment for services. The same steps are followed, but in place of a treatment, "ROA", for "received on account," is usually noted under the description. Balances are then determined, and all information is simultaneously noted on the day sheet and ledger card. A receipt may be mailed or sent electronically to the patient.

Many insurance companies have contracts with health care providers that specify amounts that will be paid for services. When the insurance company sends payment, it usually sends an "Explanation of Benefits" form. This form lists the amount charged by the health care provider, the negotiated or allowed amount according to the contract, the amount the insurance company pays, and the amount of money owed by the patient.

وزارة التعليم
Ministry of Education
2026 - 1448

If the negotiated or allowed amount is less than the charged amount, an adjustment must be made to the patient's account.

At the end of a business day, the day sheet provides a total record of all charges and payments and a method of checking accounts. Daily totals are obtained by adding the amounts of each column on the day sheet. The accuracy of the records can be checked immediately.

Because a series of records is recorded at one time, it is important for the recorder to use a ballpoint pen and print neatly while pressing hard enough for all copies to record. If an error is made, it must be lined out neatly. Neither erasers nor correction fluid should be used because these are financial records that may be audited for tax or legal purposes. If a major error is made, it may be best to void the statement–receipt record and start a new record. Neatness and accuracy are essential when using the pegboard system. These are bookkeeping records; therefore, they must be stored for reference. Special folders can be purchased for this purpose.

FINANCIAL ACCOUNTING SYSTEMS

Most health care facilities use computer bookkeeping systems. There are many types of software available, but most provide the same basic functions. Most systems begin with the creation of a patient's account history or a computerized ledger card. Information including the name and address of the patient, the person responsible for the account, family members in the account, and insurance information is entered for each patient. These patient demographics form the database for the system.

In Saudi Arabia, health care billing and coding are supported by the Saudi Billing System (SBS), which works alongside ICD-10-AM, ACHI, and Australian Coding Standards (ACS). These systems help to standardize diagnosis codes, procedure codes, claims, billing information, and health data reporting. The National Platform for Health and Insurance Services (NPHIES)/National Health Information Exchange System (NAFIS) also supports the secure electronic exchange of health and insurance information between health care providers and payers. ICD-10-AM codes used in the agency are also programmed into the computer, together with a description of the codes and the fees charged for each. Most software is programmed to indicate a source of payment. When a patient receives a service, the patient's account history is retrieved. Information about the service is entered on a daily transaction screen (**Figure 5–13**). When the correct codes are entered, the software automatically calculates the current balance by using the past balance in the account history and adding it to the new charges. If payment is made, the software deducts the payment and calculates the new balance. The account history or computerized ledger card is updated automatically as entries are made. Printed copies of the account can be given to the patient or electronic copies can be sent to the patient to show all charges, payments made, and the current balance due. In addition, the account history can be used for billing patients at regular intervals.

وزارة التعليم
Ministry of Education
2026 - 1448

Messages-

Patient and Provider INFORMATION
Patient Name_____
Relationship _____
Voucher Number _____
INSURANCE INFORMATION
Covered by Insurance _____
Plan Covering Treatment_____

Starting Balance SAR_____
Account Number _____
Provider Number _____
Treatment Date _____/_____/_____

Service Place _____
Last Entered Diagnosis
Description is:

TREATMENT AND PAYMENT INFORMATION

Proc. Code	Description	Charge	Receipt	Primary Diag.	Suffix
	Totals			New Balance	

E - Edit, A - Abandon, S - Save, H - Save/Hold, F - Finished
F1-New F2-Daily F3-Report F4-Update F5-Post F6-Pull F7-Mail F8-Recall F9-Notes

FIGURE 5–13 A daily transactions entry screen allows the health care provider to enter information about a patient's treatments and maintain the patient's account.

In addition to handling patient accounts, bookkeeping software will also create a daily journal. This provides a financial record showing patients seen, services provided, charges, payments made, and outstanding balances. Most software will generate a deposit slip created from the totals entered as payment is made.

Most electronic billing systems are easy to use. The software guides the user through each step of entering financial information by providing directions or asking the user questions. However, the health care team member must still understand the basic principles of financial management used in the manual bookkeeping method to use the computerized program. In addition, safeguards must be in place when this type of system is used. Most agencies use password protection so only authorized individuals are allowed access to the financial information. In addition, all systems should be programmed to record deleted transactions to prevent someone from deleting a transaction and stealing the money. A final important point is to make sure frequent backups are made of all information in case of computer failure.

checkpoint

1. What is a day sheet?
2. What does "ROA" stand for?

وزارة التعليم
Ministry of Education
2026 - 1448

Today's Research — Tomorrow's Health Care

Bionic Peepers?

Retinitis pigmentosa (**Figure 5–14**) is the name given to a group of inherited eye diseases that cause a gradual loss of vision leading to blindness. These diseases affect the retina, the nerve sensitive layer of the eye that contains the photoreceptor cells called cones and rods. Cones are sensitive to color and are used mainly to provide vision when it is light. Rod cells are used for vision in dark or dimly lit environments and to capture images to provide peripheral or side vision. Retinitis pigmentosa causes a gradual deterioration of these cells, eventually leading to blindness. This disease is usually diagnosed in adolescents and young adults, and most people with the condition are blind by age 40.

Researchers have helped individuals with retinitis pigmentosa see some images by creating an artificial retina. The first artificial retina contained 16 electrodes and was implanted in 6 patients. The patients were able to distinguish some light patterns and locate some objects. This success led to the development of an Argus II implant, which contains 60 electrodes. The system uses glasses with a video camera to capture the scene, processes the information on a computer the size of a wallet that is worn around the patient's neck or on a belt, and sends a signal to the electrodes implanted in the retina. The electrodes then stimulate the photoreceptors to transmit the signal to the brain through the optic nerve to create the images of sight. It was implanted in 30 patients for the first clinical trials that ran for almost 4 years. The device did not restore normal vision, but the patients were able to see colors, recognize large letters, and locate objects. Two patients were even able to read short sentences. Research continues to increase the number of electrodes in the implant to allow patients to interpret more images.

Now major research is being directed toward creating a retinal implant using a conductive polymer material that is covered with a semiconducting polymer, which bends and flexes like normal tissues when it is implanted in the eye. The semiconducting polymer absorbs photons when light enters the eye and directs electrical signals to surviving retinal neurons, which then send the impulses to the brain for interpretation as vision. This implant does not need an external camera or computer because it acts like healthy retinal tissue. Initial trials are being conducted to determine how effective the implant is in restoring vision.

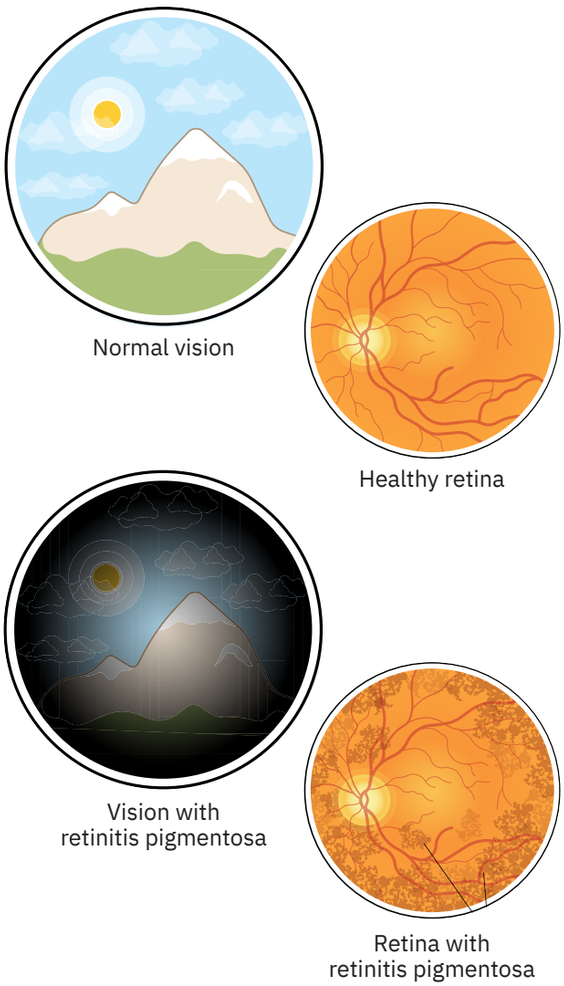


FIGURE 5–14 Retinitis pigmentosa.

Case Study Investigation Conclusion

When Khalid and Fahad are scheduled to cross-train in scheduling and filing, what skills will they need? What are some of the filing tips Khalid would tell Fahad as he is training him? What points will Khalid need to be aware of when he schedules patients and takes messages?

وزارة التعليم
Ministry of Education
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 250 14/06/2023 10:30

CHAPTER 5 SUMMARY

- Business and accounting skills are used in many health care careers. Many of the skills can be used in the personal life of the health care provider.
- Proper use of the telephone, composing professional business letters, and completing insurance forms, are essential skills for those who work in medical or dental offices, private health care facilities, or business offices of major health care providers.
- Proper filing techniques and proper scheduling of appointments can help a health care facility function efficiently.
- Maintaining patient records, such as patient information forms and medical histories, is an important aspect of patient care. Accuracy is essential because medical records are considered legal documents.
- Bookkeeping systems are used to maintain financial records for health care facilities, including records of services rendered, payments made, and balances due on accounts.
- By learning business and accounting skills, the health care team member can choose from a variety of health care careers.

Mini Case 5:1 A Question of Priority

The physician is due at the office at 10 a.m. Abdullah has just arrived at work and finds several messages waiting:

a. Mona calls at 8:30 a.m. Her daughter has a fever of 39°C. She wants the physician to see the child or to call in a prescription. No other signs or symptoms are given in the message. She can't bring the child in until 4 p.m.

b. Mohammed, a hospital consultant, calls at 9:15 a.m. He has seen Ruba, a patient the physician referred to him for consultation. Mohammed would like to tell the physician his findings. Mohammed will be in his office from 1 to 4 p.m. From 4 to 6 p.m., he will be at the hospital. After 7 p.m., he will be at home.

c. An Ace Medical Supply salesperson calls at 9:30 a.m. He is calling in regard to the ECG paper the physician ordered. Paper Model 524 is no longer available. He can send the substitute, Model 529, but it is more expensive. He can also try to locate some old stock of Model 524. He believes that both are of equal quality.

d. The hospital calls at 9:45 a.m. in regard to Younis. Younis started vomiting bright red blood at 9:40 a.m. after his surgery. The nurse calling is on Ward 5B, extension 5566. They want the physician to call immediately.

analysis

1. How should Abdullah decide which is the most important message that the physician needs to respond to first? What questions will help Abdullah to prioritize these messages?

_____

_____

2. Should Abdullah deal with any of the messages himself? Why?

_____

_____

3. The physician has asked Abdullah to find out more about the condition of Mona's daughter. What questions should he ask Mona?

_____

_____

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2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 251 14/06/2023 10:30

Mini Case 5:2 A Worried Patient

Mira has been asked by her supervisor to take a medical history from Noor, who is coming into hospital for a gall bladder operation, and complete a medical record form for her. Noor is 56 years of age and is married with three children. Noor is worried about coming into hospital and seems stressed. Her husband has come with her to the appointment. Mira also needs to take and record Noor's vital signs on the medical history form.

analysis

1. What questions does Mira need to ask Noor?

2. How can Mira put Noor at her ease so she can answer her questions fully?

3. Should Mira attempt to take Noor's vital signs at this appointment? Justify your answer.

Mini Case 5:3 An Angry Patient

Fatima is acting as receptionist at your local clinic this morning. She answers the telephone with her usual greeting. A man's voice shouts, "I need to speak to the doctor now!" Fatima needs to screen the call to determine whether the call is important and should be put through to the doctor or dealt with by a nurse or other health professional in the clinic. The man refuses to give Fatima any information but just keeps repeating his request.

analysis

1. How should Fatima respond to the caller?

2. What information does Fatima need to obtain from the caller?

3. If Fatima is unable to obtain any further information, how should she proceed? Why?

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REVIEW QUESTIONS

1. What is the purpose of a telephone triage procedure?

2. List five sections on a medical history form. Briefly describe the type of information in each section.

3. Differentiate between a modified block style and a block-style letter.

4. What is an ICD-10-AM code?

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2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 253 14/06/2023 10:30

5. What safeguards are needed when using electronic billing systems?

6. What is a statement–receipt record used for?

7. If the patient is a dependent, who should sign an insurance document?

8. What is a mailmerge feature used for?

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GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 254 14/06/2023 10:30

CRITICAL THINKING

1. Research and obtain blank patient medical history forms from a hospital and a medical office. Interview another student in class and fill out each form based on the information they tell you. Write a paragraph detailing the differences in the forms. Why did each type of facility choose the type of form they used?

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2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 255 14/06/2023 10:30

2. Research specific insurance companies, health maintenance organizations, and preferred provider organizations to determine their requirements for processing claims.

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Ministry of Education
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 256 14/06/2023 10:30

3. You work in a medical office for four different doctors. Create a list of triage questions that you can use to determine whether a patient needs an immediate appointment.

ACTIVITIES

1. Complete the patient information form and medical history form in **Figures 2–8** and **2–10** based on the following case: Salem and Nawal came into the doctor's practice for the first time today. They are late for their appointment. They are both retired and have health insurance, but only Nawal had her card and could tell them her number, which was is 0112345678. They share an e-mail. Nawal has a history of headaches, blurry vision, coughing, and asthma, and has just recovered from a urinary tract infection. She does not take any medication except for paracetamol when she gets a headache. Salem has a history of shortness of breath, chest pain, and heartburn. He takes antacids and valsartan 350 mg for high blood pressure. Neither one has ever had cancer or sought psychiatric treatment.
2. Create a sample business letter for each of these purposes:
   a. recall letter
   b. consultation letter
3. Practice the following situations with a partner. Assume the roles of both the caller and the receptionist receiving the call.
   a. A patient calls to make an appointment.
   b. Another doctor calls to discuss his findings on a referred patient.
   c. A mother calls. Her child is ill.
   d. A salesperson calls. She has some new equipment she wants to demonstrate and discuss.
   e. A man calls. He states that his wife just fell to the floor unconscious.

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2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 257 14/06/2023 10:30

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CHAPTER

6

PROFESSIONAL DEVELOPMENT AND LIFELONG LEARNING

Case Study Investigation

Maryam loves her work as a nurse assistant. One of the reasons that Maryam wanted to be a nurse assistant was because she likes to interact with other people. Her outgoing personality helps her develop good relationships with patients, and her cheerful disposition makes her a popular assistant. Maryam looks forward to the annual nursing conferences, held in different cities around the country. They provide opportunities to see friends she has made in the profession and catch up on all the news. However, she doesn't enjoy the learning sessions, nor does she keep up to date with the medical literature or do anything else to further her career. What is the possible impact on her future career?

LEARNING OBJECTIVES

After completing this chapter, you should be able to:

- State the meaning of "continuing medical education", "continuing professional development", "self-directed learning", "role model", and "mentor".
- List ways in which the health care professional can grow professionally.
- State five purposes of professional organizations.
- Explain the importance of lifelong learning for the health care professional.
- Describe the changes and trends in health care and their corresponding learning requirements for health care professionals.
- Provide criteria for choosing quality courses and materials for professional development.
- List the qualities to look for when choosing a role model.
- Explain how the duties and responsibilities vary with different levels on career ladders.

KEY TERMS

career ladder
continuing medical education (CME)
continuing professional development (CPD)
in-service training
lifelong learning
mentor
professional development
role model
self-directed learning

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1445 - 1446

FIGURE 6–1 Professional development means continually striving to improve and be your best.

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6:1 PROFESSIONAL DEVELOPMENT

Professional development means continually striving to improve and be the best at your profession **(Figure 6–1)**. It also means finding satisfaction in your work and participating in professional activities beyond those required during the normal workday. Obtaining a job is only the first step on the career path. Professional development keeps the journey headed in the right direction. Whether the health care professional spends an entire career at the same job or makes many changes, professional development is necessary for long-term success. All health care occupations are affected by rapidly occurring medical discoveries and technological advances, so continual learning is required to stay current and perform effectively. In many occupations, it is required to maintain a license or certification. Do not view professional education as a burden, but rather as an opportunity to expand your knowledge and opportunities.

There are many ways to grow professionally and maintain a lively interest in work:

- **Set goals:** Setting attainable goals and periodically reviewing your progress are powerful motivators for growth. Well-planned goals serve as road maps toward a fulfilling future.
- **Join professional organizations:** In addition to providing learning opportunities, these organizations are places to share experiences with other health care professionals. Friendship and mutual support increase career satisfaction. Active participation on committees or as an officer is an excellent way to practice teamwork and leadership skills. Professional organizations are also good sources for obtaining continuing education credits. Professional organizations are discussed in the next section.

FIGURE 6–2 Maintaining and expanding your networking contacts is important for your career.

- **Network:** Networking is not limited to the initial job search. Maintaining and expanding your networking contacts exposes you to new ideas and opportunities for advancement (**Figure 6–2**). Once employed, consider helping others start their careers by giving them information and encouragement. Networking goes in both directions and should be considered a career-long activity.
- **Request additional responsibility:** This is a way to both show and maintain interest in the job. After mastering the basic duties and work routine, adding new responsibilities keeps the challenge alive.

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2016 - 1448
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- **Stay in touch with your mentor:** A good mentor keeps you motivated and aiming toward excellence by providing ongoing career advice. Mentors are discussed later in this chapter.

A career in health care involves enormous responsibilities and tremendous rewards. Engaging in professional development activities can help maintain the balance and ensure a long and satisfying career in the service of others.

PROFESSIONAL ORGANIZATIONS

Participating actively in a professional organization can contribute positively to professional development. Most health care occupations have an organization whose purposes include the following:

- Promoting the profession.
- Ensuring quality patient care by making certain that professionals have the necessary knowledge and skill sets.
- Sponsoring continuing education (learning experiences beyond those needed to earn the initial certificate or degree to work in an occupation). Some organizations offer leadership courses to help their members to advance in their professions.
- Encouraging networking among members.
- Supporting legislation on behalf of the profession.

Serving on committees, volunteering to help with projects, and running for office are excellent ways to become involved. There are many advantages for health care professionals who participate at any level:

- Learning to work in a group to achieve common goals.
- Meeting established professionals who can offer career advice and serve as positive role models.
- Keeping current in the field.
- Developing management skills.
- Receiving the support and encouragement of colleagues.

checkpoint

1. What does “professional development” mean?
2. Name two purposes of professional organizations.

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Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 261 14/06/2023 10:30

FIGURE 6–3 Keeping up to date with technology is important: the Kingdom of Saudi Arabia pavilion at the Gitex Global technology exhibition.

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2023 - 1445
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6:2 THE IMPORTANCE OF LIFELONG LEARNING

Lifelong learning refers to all purposeful learning activities, both formal and informal, that take place throughout our lives. Today, lifelong learning is more important than ever because the world is changing faster than at any other time in history. Until the mid-20th century, people could expect to live in much the same way as their parents and grandparents had. Current advancements in technology now produce significant changes during a single lifetime. For example, people who today are in their 80s grew up without television. Those in their 50s began their professional lives without personal computers, handheld calculators, cellular phones, and many other products that are now considered necessities. Today, most people take change for granted and incorporate it into their lifestyles. They are no longer surprised by the constant stream of new products available, or the speed of the changes in these products that require them to be updated even before they are worn out by use.

What new health care professionals may find surprising is how much learning will be required after graduation to keep up with the many changes that affect the way jobs are performed. For example, many people in the workforce today learned to use a personal computer after they had completed their formal education and were already employed. They had to take the time to read manuals, attend workshops, watch videos, or use tutorials to learn to use what has now become an essential tool for work in health care. The need to learn in the area of computers alone will continue to grow as new applications and updated versions of software and hardware are developed (**Figure 6–3**).

KEEPING UP WITH CHANGES IN HEALTH CARE

Changes in the delivery of health care are taking place continually. Knowledge quickly becomes outdated, and within a few years of entering the health care field, an individual who fails to keep up with current information will become incompetent. Your graduation, then, marks the end of formal training and the beginning of lifelong learning.

In addition to technology, social and demographic changes and trends require that health care professionals acquire new knowledge and skills. **Table 6–1** shows examples of changes and the corresponding learning requirements for health care professionals. Standard precautions are now common knowledge in the workplace, yet they are actually a relatively recent development. Health care professionals who work in certain positions must be trained and tested on various standards, including undergoing annual reviews. Health information professionals must continue to update their knowledge of contract management, patient

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Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 263 14/06/2023 10:30

eligibility, and billing procedures. The shift in patient demographics has meant that a large percentage of those who provide direct patient care will spend much of their time working with older adults.

Many health care occupations have expanded their scope of practice in an effort to increase the efficiency of patient care delivery. Professionals who previously performed a limited set of tasks are now being cross-trained and becoming multiskilled. Examples of additional duties that some facilities are assigning to medical assistants include serving as health coaches and navigators, visiting homes of patients to perform risk assessments, working as pharmacy technicians, and performing the duties of a limited license radiological technician. Some of these duties require additional formal training.

Change	Corresponding learning needs of health professionals
People living longer	• Developmental stages and needs of older adults • Patient care skills for long-term care • Care of patients with chronic conditions
Increasing numbers of patients diagnosed with Alzheimer's disease and other forms of dementia	• Care of dementia patients
Hospital stays that are much shorter than in the past	• Home health patient practices and techniques • Patient education delivery techniques
Increased ethnic and cultural diversity of the population	• Diverse customs and health habits • Languages other than Arabic
Growing patient interest in complementary health care practices, such as acupuncture and holistic medicine	• Knowledge of complementary and alternative medicine • Understanding of how the use of complementary and alternative health care practices is affecting medical practices
Increase in third-party payers	• Coding and billing practices • Contract administration, obtaining preauthorization for treatment, and permission for referral to specialists
Emphasis on wellness and patients' responsibility for their own health	• Prevention practices to ward off diseases and disorders • Patient education on wellness and prevention techniques
Increased computerization	• Computer applications in health care: administration, diagnostics, treatment, and education • Computer operation skills and knowledge of software programs
Spread of viruses, return of communicable diseases such as measles, and threat of viruses due to globalization	• Use of standard precautions • Symptoms, treatment, and prevention of specific diseases
Increase in drug-resistant bacteria	• Ability to educate patients about proper use of antibiotics, including when they are not necessary
Expansion of roles for health care professionals	• Increased skill base • Flexibility and willingness to perform a variety of tasks
Increased specialization and use of teams to provide patient care	• Teamwork skills • Intraprofessional and interprofessional communication skills
Development of increasingly sophisticated equipment	• Operation of equipment and interpretation of results
New information about how the human body functions	• New discoveries that affect the professional's occupational area
New diagnostic procedures and treatments	• Information and skills that apply to the professional's occupational area

TABLE 6–1 Changes that affect health care.

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2016 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 264 14/06/2023 10:30

checkpoint

1. What is lifelong learning?
2. What professional learning might be needed due to hospital stays being much shorter than in the past?

6:3 CONTINUING MEDICAL EDUCATION

Continuing professional development (CPD) and **continuing medical education (CME)** are different terms for the types of learning that take place after the completion of formal education. CME is largely linked to medical education whereas CPD is broader and applies to all healthcare practitioners. Most forms of professional approval, such as licensure, certification, and registration, require that a number of hours of study or particular courses of study be completed to be renewed. Health care professionals should find out the requirements for their occupations well in advance of licensure and certification renewal dates to allow adequate time to meet them.

The amount of time and the activities involved vary for the different health care professions. Some require assignments to be completed or tests passed; others require class or workshop attendance (**Figure 6–4**). Many medical schools and organizations offer classes and activities for CME. However, the organizations that grant licenses, certifications, and registrations decide the CME that they will accept. Not all courses and activities are accepted by all organizations. Before engaging in any activity for the purpose of CME, be sure that it has been approved by the necessary professional or regulatory organization, for example, by the Saudi Commission for Health Specialties (SCFHS).

FIGURE 6–4 Class or workshop attendance is often necessary for continuing medical education.

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Ministry of Education
2026 - 1448

If you participate in workshops or other activities, be sure to sign in. Some organizations now have badges that are scanned electronically to record your attendance. Also, ask for a certificate verifying attendance or completion of work. These will be needed as proof that the work was done. Keep your certificates in a safe place. Enquire whether your professional organization maintains a tracking system for members' CME.

Health care professional organizations offer a variety of convenient ways to help their members stay current in their field. They can provide you with information about the CME you need in which subject areas. In addition to traditional in-person classes and workshops, there are other ways to obtain CME:

- Special sessions and workshops offered at annual meetings, conferences, and conventions sponsored by professional health care organizations; may require taking a quiz, completing an assignment, or demonstrating in some other way that you have met the objectives.
- Home study materials published in professional journals.
- Online study courses sponsored by professional organizations.
- Home study courses offered by approved educational providers.
- Distance education courses offered by colleges and universities; many courses are now available over the Internet; a growing number of institutions provide classes that include interaction with the instructor and other students.

Not all providers of learning opportunities are high quality, and not all courses are beneficial. Consider the following criteria for choosing courses and materials that offer maximum value for the time and money invested:

- Recommendations from your professional or certification organization.
- Skill and knowledge requirements of your current job.
- Future career goals.
- Credibility and reputation of the educational provider.
- Areas of personal and professional weakness that need improvement.
- Personal and professional interests.
- Accreditation by a reputable institution.

In-service training may be provided by an employer. This is usually mandatory and consists of training and communication necessary for some aspect of employees' work.

checkpoint

1. What does "CME" stand for?
2. Give two ways of obtaining CME.

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Ministry of Education
2016 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 266 14/06/2023 10:30

6:4 SELF-DIRECTED LEARNING

Self-directed learning refers to all activities that you plan and participate in to increase your knowledge and skills. It adds to your value as a professional and gives you fresh perspectives. There are many ways to incorporate learning into your daily life:

- **Observe others:** Watch how successful, experienced professionals perform their duties.
- **Ask questions:** Learn from the expertise of others. Most people are happy to share what they know (**Figure 6–5**). Be sure to choose an appropriate time to ask questions. For example, do not ask questions about patients in their presence or when the other professional is very busy and cannot stop to talk.
- **Read books and journal articles:** Plan a regular time to keep up on publications related to your occupational area. Most professional organizations publish a newsletter or journal, online or in print. In addition, there are hundreds of specialized journals that cover medical and health care topics. Many large health care facilities have libraries for employees. Some have libraries open to patients and the public. Many universities and colleges allow the public to use their libraries.
- **Study in a small group:** Organize a study group with other employees at work. Or, if you belonged to a study group at school, consider encouraging the members to meet regularly after you graduate. You can learn by sharing workplace experiences and working on selected topics to keep current in your field.

FIGURE 6–5 Learn from the expertise of others. Most people are happy to share what they know.

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Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 267 14/06/2023 10:30

- **Attend professional conferences and meetings:** These often include lectures, workshops, and discussions of current topics.
- **Explore the Internet:** Information is available on all kinds of topics and in a variety of formats, including webcasts, podcasts, and videos. *Youtube.com* has dozens of videos and learning channels on health care topics. Ted Talks addresses current topics, including those related to health care (*https://www.ted.com/talks*).

Planning your own study activities allows you to learn in ways you prefer. Look for activities that make learning enjoyable and incorporate them into your daily life. Think of the world as a giant classroom that offers endless opportunities for learning. Keeping up with changes and adding to your knowledge and skill base should be part of your work routine. You will have the satisfaction of knowing that you are staying current and competent.

In addition to developing health care skills, you can advance your career and personal life by improving nontechnical skills. Oral and written communication, interpersonal relations, computer applications, and time management are examples of important skills that will help you get ahead.

LEARN FROM ROLE MODELS AND MENTORS

A **role model** is a person who serves as a positive example. Role models demonstrate high levels of professionalism and competence. They strive to be their best and provide inspiration through their abilities, courage, and dedication. Following the example of appropriate role models is an excellent way for the new health care professional to continue the education received during formal training.

What are the qualities to look for when choosing role models?

Look for someone who:

- Is dedicated to their profession.
- Has good technical skills.
- Is respectful of others.
- Has high standards.
- Has confidence gained through experience.
- Has a high level of integrity.
- Has an ability to work well with people.
- Understands the health care field.

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Ministry of Education
2016 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 268 14/06/2023 10:30

What is a mentor?

A **mentor** is a combination of personal coach and advisor. A mentor should also have the qualities of a role model. Having a good mentor is a tremendous career advantage. However, it does not happen automatically. Look for someone with professional experience, expertise, an interest in helping others, and time to spend with you. This person might work in the same department or facility or be someone you meet at a professional meeting or through networking activities pursued during the job search (**Figure 6–6**).

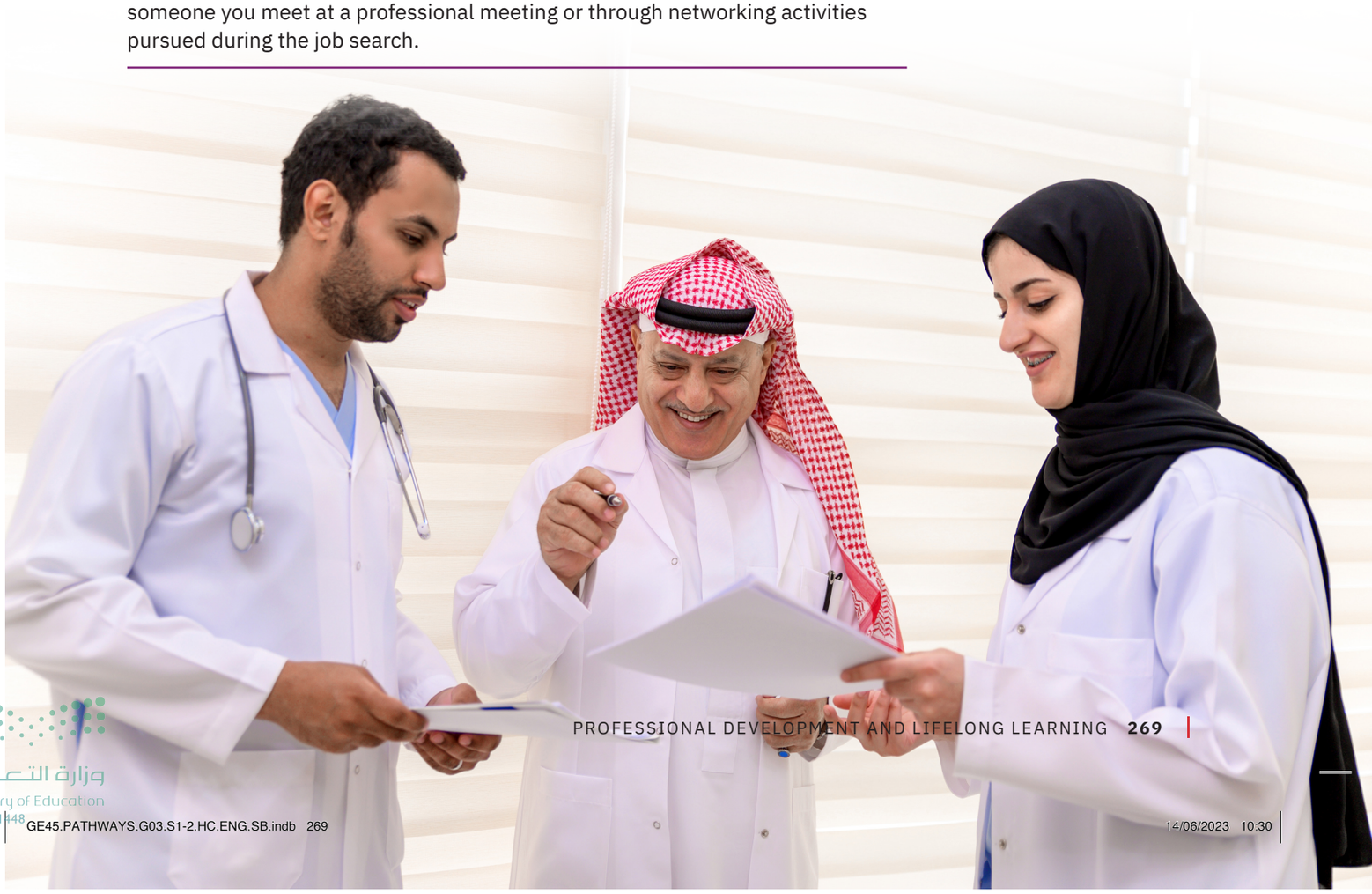
A few of the ways that a mentor can help the beginning health care professional include:

- Suggesting learning resources.
- Offering suggestions and advice about career strategies.
- Providing introductions to people in the field.
- Passing on information about job openings.
- Encouraging you to be your best.

checkpoint

1. What is self-directed learning?
2. Why is it an advantage to have a mentor?

FIGURE 6–6 A mentor might work in the same department or facility or be someone you meet at a professional meeting or through networking activities pursued during the job search.



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Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 269 14/06/2023 10:30

6:5 CAREER LADDERS

Occupational areas have positions at different levels, with the levels compared to rungs on a ladder. Although many health care professionals obtain career satisfaction and success by remaining at one level, others are interested in "climbing the **career ladder**" by obtaining additional education and experience. It is important to know that the work at various levels, while in the same field, may vary. Some examples include:

- The amount of time spent working directly with patients.
- The paperwork and reports required.
- Working closely with a supervisor or independently (**Figure 6–7**).
- Working environment.
- Additional responsibilities and accountability.

It is recommended that anyone considering "moving up the ladder" learn everything possible about the educational requirements, duties performed, and employment prospects of the new level.

checkpoint

Give two examples of work at different levels within health care.

FIGURE 6–7 Moving up the career ladder might include working closely with a supervisor.

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Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 270 14/06/2023 10:30

Today's Research — Tomorrow's Health Care

No More Blood and Urine Tests?

Tests on blood and urine are used to diagnose many different diseases and to check the health status of the body. However, obtaining blood can be painful, and collecting urine can be messy. Now, thanks to biotechnology, it may be possible to use tears, sweat, and saliva to perform diagnostic tests. An estimated 402 million diabetics worldwide need to monitor blood glucose levels several times a day by puncturing their fingers with a lancet to obtain blood (**Figure 6–8**). In initial research, engineers used a small biochip containing thousands of light-measuring devices to measure the amount of glucose in water. Researchers found that this level is similar to levels found in saliva. Other researchers found that they could measure glucose levels in the tears of rats with a similar biosensor. If diabetics could use tears or saliva to measure glucose levels, it would allow them to avoid the discomfort associated with repeated finger punctures.

One problem found by researchers was the fact that they could not always correlate blood glucose levels with glucose levels in saliva and tears. The latest research has developed biosensors that can be applied to the skin. These sensors measure glucose levels in fluid that surrounds cells. A small transmitter attaches to the sensor. When a recorder is held over the sensor, the glucose reading is displayed on a screen. By using these devices, diabetics can avoid frequent finger punctures to obtain blood, and they can check their glucose levels easily and frequently.

FIGURE 6–8 Diabetics need to monitor blood glucose levels by puncturing their fingers with a lancet to obtain blood.

Another device currently being evaluated that is also applied to the skin contains tiny holes at its base to collect sweat. The sweat is transferred to tiny reservoirs in the device, and each reservoir contains a sensor that reacts with a specific chemical in the sweat, such as glucose for diabetics, lactate for people with cystic fibrosis, and even oxygen levels for people with respiratory diseases. Similar research is being performed on the sweat on fingers. Bioengineers are now building sensors that specifically measure a wide range of substances. It will be many years before many of the sensors are available for commercial use, but if they prove successful, the sensors will provide an easier way to perform many medical tests.

Case Study Investigation Conclusion

Maryam is missing out in her career development. She may not be able to progress up the career ladder because she has not kept up to date with her profession. She treats the annual conferences as a way of seeing her friends and not as a means of acquiring new skills and knowledge. Perhaps she could find an alternative way of learning that suits her better? If she does this, she will be able to maintain her skills and remain a useful member of the health care profession.

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Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 271 14/06/2023 10:30

CHAPTER 6 SUMMARY

- Professional development is essential for keeping up to date with developments in the health care profession. Professional organizations can contribute positively to the professional development of their members.
- Lifelong learning is more important than ever because the world is changing faster than at any other time in history. Knowledge quickly becomes outdated, and within a few years of entering the health care field, an individual who fails to keep up with current information will become incompetent.
- CPD/CME describes the types of learning that take place after the completion of formal education. The amount of time and the activities involved vary for the different health care professions.
- Self-directed learning allows you to learn in ways you prefer.
- Role models and mentors can be helpful in developing professionalism and competence.
- Occupational areas have positions at different levels, with the levels compared to rungs on a ladder, often called the "career ladder."

Mini Case 6:1 Learning New Skills

Asma has always worked in a general medical ward, but she has been asked to transfer to the geriatric ward. She does not know much about working with older people.

analysis

1. What does Asma need to know before she takes up her new post?

2. How can she find out more about the possible problems of older people?

3. Who can she ask to help her?

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Ministry of Education
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 272 14/06/2023 10:30

Mini Case 6:2 A New Medical Assistant

Omar is a new medical assistant in your department. He is uncertain about how to keep up to date with his professional development. You are a more experienced assistant and are an active member of a local professional medical organization. Omar asks you what he should do to improve his skills.

analysis

1. What ways can you suggest to Omar to start his journey of professional development?

2. How could you use your own network to help Omar?

3. What can you tell Omar about the advantages of belonging to the professional medical organization?

Mini Case 6:3 Looking For a Mentor

Amir has been working as a nurse assistant in a local hospital for six months. He feels that he needs support to develop his skills. He asks his friend Hasan, who works in a different part of the hospital, what he could do. Hasan suggests asking a more experienced colleague to mentor him.

analysis

1. What qualities should Amir look for in a mentor and why are these qualities important?

2. What advantages can Amir gain from having a mentor?

3. What else could he do to help himself to improve?

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Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 273 14/06/2023 10:30

REVIEW QUESTIONS

1. List three ways in which a health care professional can grow professionally.

2. What are five advantages of participating in a professional organization?

3. Why is lifelong learning important for health care professionals?

4. Describe five changes and trends in health care. What are the learning requirements for the health care professional that correspond to each one?

وزارة التعليم
Ministry of Education
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 274 14/06/2023 10:30

5. What is the meaning and significance of “expanded scope of practice”?

6. What are the criteria for choosing quality courses and materials for continuing medical education?

7. List four ways that you can incorporate self-directed learning into your daily life.

8. What are five qualities to look for when choosing a role model?

9. What should you look for in a mentor?

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 275 14/06/2023 10:30

10. What should someone considering “moving up the career ladder” learn?

CRITICAL THINKING

1. Noura is a nurse assistant working for a physician’s office in a small town. Because of the limited number of health care facilities in the area, many long-time patients rely on this caring physician for the majority of their health care needs. Noura enjoys the variety of experiences encountered in her work with the practice: patients of all ages with all types of health issues. An important professional goal is to keep her skills up to date and to continue to acquire new ones. Learning opportunities are limited by her busy work schedule and family responsibilities and by living in a small town. Develop a long-term plan for Noura to achieve her goal.

وزارة التعليم
Ministry of Education
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 276 14/06/2023 10:30

2. Write a description of your ideal mentor. Analyze the ways in which your mentor could help you to develop.

ACTIVITIES

1. Create a personal plan for self-directed learning.
2. Request a continuing education catalog from a local college or university. What types of courses are offered? Identify any that might help you develop your personal or professional skills, and write your reasons for applying for the course.
3. Choose a health topic you find interesting and conduct an Internet search. Record your findings and develop a bibliography (a list of sites with name, web address, and brief description of contents) of useful sites.

وزارة التعليم
Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 277 14/06/2023 10:30

GLOSSARY

A

active listening—Focusing fully on what the speaker is saying.

alignment—Positioning and supporting the body so that all body parts are in correct anatomical position.

Alzheimer's disease—A progressive cerebral disease that destroys brain cells, causing serious disorders with the faculties of memory, thinking, and behavior. It severely affects the patient's life and work, as well as their pattern of social life. As time passes, the patient's condition deteriorates, and often leads to his demise. Nowadays, Alzheimer's disease is ranked the sixth major reason for death around the world (Ministry of Health).

anesthesia—The state of inability to feel sensation, especially the sensation of pain.

answering service—A service that responds to telephone calls when an agency is closed; the patient talks with an operator who can transfer the call to the appropriate individual, contact the individual and ask them to call the patient, or record a message.

aphasia—The loss or impairment of the power to use or comprehend language, usually as a result of injury or damage to the brain.

arteriosclerosis—A condition in which the walls of blood vessels become thick and lose their elasticity.

arthritis—An inflammation of the joints that causes the joints to become stiff, less flexible, and painful.

assessment—Gathering information and checking what it means.

atherosclerosis—A condition in which the vessels become narrow because of deposits of fat and minerals on the inner walls of the arteries.

auscultation—The process of listening for sounds in the body.

automated routing unit—A system that answers the telephone and uses a recorded voice to provide directions to the caller.

autonomy—Self-governance or the ability to decide for oneself by making choices and pursuing a course of action.

B

body language—Body posture and movements that convey messages to the observer.

bookkeeping—The process of recording the financial transactions made by a business.

bronchitis—Acute or chronic inflammation of the bronchial tubes (air tubes in the lungs).

buffer period—A period of time kept open on an appointment schedule to allow for emergencies, telephone calls, and other unplanned situations.

C

career ladder—The various levels within an occupational area that require different amounts of education and training.

cataract—A condition in which the normally transparent lens of the eye becomes cloudy or opaque, leading to blindness.

catheter—A rubber, metal, or other type of tube that is passed into a body cavity, used for injecting or removing fluids.

cerebrovascular accident—Also called a stroke or apoplexy; an interrupted supply of blood to the brain, caused by formation of a clot, blockage of an artery, or rupture of a blood vessel.

continuing medical education (CME)—Education or training for health care professionals to stay up to date with the latest developments in the medical field.

continuing professional development (CPD)—The ongoing process of developing and maintaining one's professional skills.

وزارة التعليم
Ministry of Education
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 278 14/06/2023 10:30

D

dangling—Positioning the patient in a sitting position with their feet and legs over the side of the bed prior to ambulation.

defecate—To evacuate fecal material (waste) from the bowel through the rectum.

dehydration—Insufficient amounts of fluid in the tissues.

delirium—Acute, reversible mental confusion caused by illness, medical problems, or medications.

dementia—A loss of mental ability characterized by a decrease in intellectual ability, loss of memory, impaired judgment, personality change, and disorientation.

dorsal recumbent—A position in which the patient lies on the back with the knees flexed and separated; used for vaginal and pelvic examinations.

drapes—Paper or cloth coverings placed over a patient's body during medical procedures to maintain sterility or provide privacy.

dysphagia—Difficulty in swallowing.

dyspnea—Difficult or labored breathing.

E

edema—Swelling; excess amount of fluid in the tissues.

electronic health record (EHR)—A computer-stored version of all of a patient's medical information.

emphysema—A chronic respiratory condition that occurs when the walls of the alveoli deteriorate and lose their elasticity resulting in poor exchanges of gases in the lungs.

F

feedback—A method used to check understanding of what is said, consisting of paraphrasing, reflecting, and asking questions.

filing—Arranging in order.

forceps—An instrument used for grasping and holding objects; it can be straight or curved with finger grips.

Fowler's—Positions in which the patient lies on the back with the head elevated at one of several different angles.

G

glaucoma—An eye disease in which the intraocular pressure of the eye increases and interferes with vision.

H

hemostat—An instrument used to compress (clamp) blood vessels to stop bleeding.

horizontal recumbent (supine)—A position in which the patient lies flat on the back, face upward.

hyperopia—Long-sightedness; a defect in near vision.

I

incontinence—The inability to control urination.

in-service training—Training offered by an employer specific to the needs of employees.

intake—All fluids taken in by a patient.

integrity—Being honest at all times; respecting the privacy of others; being loyal and accepting responsibility for your actions.

International Classification of Diseases—A database produced by the World Health Organization in which clinical terms are coded.

وزارة التعليم
Ministry of Education
2026 - 1448

J

jackknife (proctologic)—A position in which the patient lies on the abdomen with both the head and legs inclined downward and the rectal area elevated.

K

knee–chest—A position in which the patient rests their body weight on the knees and chest; used for sigmoidoscopic and rectal examinations.

L

lifelong learning—All purposeful learning activities, both formal and informal, that take place throughout our lives.

lithotomy position— A position in which the patient lies on the back with the feet in stirrups and knees flexed and separated.

M

medical history—A record that shows all diseases, illness, and surgeries that a patient has had.

mentor—A combination of coach and advisor who can provide information and encouragement.

myopia—Short-sightedness; a defect in distant vision.

N

node—A small oval structure (gland) that is shaped like a bean and is part of the body's immune system.

nocturia—Excessive urination at night.

nonverbal communication—Communication that does not involve speaking: tone of voice, body language, gestures, facial expressions, touch, and physical appearance.

O

objective data—Facts; things that can be observed or measured and tested.

observation—The act of looking at, watching, perceiving, or noticing something during an examination.

operative/intraoperative—During surgery.

osteoporosis—A condition in which bones become porous and brittle because of lack or loss of calcium, phosphorus, and other minerals.

ostomy—A surgically created opening into a body part.

output—All fluids eliminated by a patient.

P

paging system—A system that allows an individual to be contacted by using a pager or beeper; a pager can provide a voice message, a signal such as a beep that alerts the individual to call a designated number to receive the message, or a digital message on a display screen with the telephone number of the caller or a message.

palpation—The act of using the hands to feel body parts during an examination.

patient portal—A secure online website that is established by a physician, health care facility, or other health care provider.

percussion—The process of tapping various body parts during an examination.

personal hygiene—Care of the body, including bathing, back care, perineal care, oral hygiene, hair care, nail care, and shaving, when necessary.

postoperative—After surgery.

preoperative—Before surgery.

pressure ulcer—Also called a decubitus ulcer, pressure sore, or bedsore; a sore caused by prolonged pressure on an area of the body that interferes with circulation.

problem-solving process—A step-by-step way of finding an answer to one or more questions.

professional development—Continually striving to improve and be the best possible at your profession.

prone—A position in which the patient lies on the abdomen, with the legs together and the face turned to the side.

R

reality orientation—Activities that help to promote awareness of person, time, and place.

receiver—The listener in a conversation; the person to whom the sender directs the message.

retractor—An instrument used to hold or draw back the lips or sides of a wound or incision.

role model—A person who serves as a positive example.

S

scalpel—An instrument with a knife blade used to incise (cut) skin and tissue.

scope of practice—What you are legally allowed to do in your profession.

self-directed learning—All activities that an individual plans and participates in to increase knowledge and skills.

sender—The talker in a conversation; the person who creates and delivers the message.

senile lentigines—Yellow or brown colored spots that develop on the skin as aging occurs.

signs—Objective data that can be observed in a patient, such as their height or temperature.

Sims' (left lateral)—A position in which the patient lies on their left side with the right leg bent up near the abdomen.

specimen—A sample (of fluid or solid material) taken for testing in a laboratory.

speculum—An instrument used to dilate, or enlarge, an opening or passage in the body for examination purposes.

stethoscope—An instrument used for listening to internal body sounds.

subjective data—Feelings and desires; something that is reported by the patient and not observed or measured by a health care professional.

sutures—Surgical stitches used to join the edges of an incision or wound; also, an area where bones join or fuse together.

symptoms—Subjective data reported by a patient that cannot be directly observed or measured by a health care professional.

T

therapeutic communication—Effective communication in health care.

thrombus—A blood clot.

transient ischemic attack (TIA)—A brief episode that disrupts the blood flow to the brain and causes the same symptoms as a cerebrovascular accident or stroke; frequently called a ministroke.

Trendelenburg—A position in which the patient lies on the back with the head lower than the feet, or with both the head and feet inclined downward.

triage—A method of prioritizing treatment.

U

urinary drainage unit—A special device used to collect urine, consisting of tubing and a collection container usually connected to a urinary catheter.

urinate—To expel urine from the bladder.

V

visual acuity—The ability to perceive and comprehend light rays; seeing.

voicemail—An electronic communication system that instructs the caller to leave a message if the individual is not available, or directs the caller to contact another person.

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Ministry of Education
2026 - 1448
GE45.PATHWAYS.G03.S1-2.HC.ENG.SB.indb 281 14/06/2023 10:30

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2026 - 1448